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Tenth Anniversary Issue

KANSAS BUSINESS REVIEW

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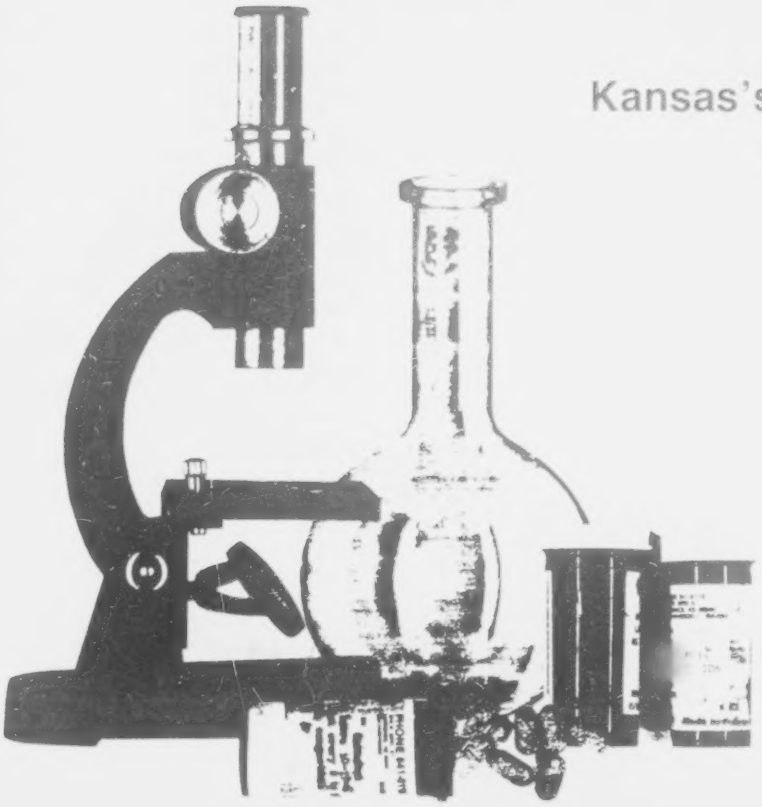

The Institute for Public Policy and Business Research, The University of Kansas

KANSAS BUSINESS REVIEW

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Using Federal Tax Policy to Influence Firm Locations: Two Examples of the Impact on Kansas Communities 1
Pat Oslund

The example of Puerto Rico shows that strong federal tax incentives do encourage economic development, but in this case the cost to U.S. taxpayers well outweighs the benefits to the Commonwealth or to the nation as a whole. A federal investment tax credit for business locating in depressed rural areas of the United States would also encourage economic development, but again the costs would outweigh the benefits.

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Measures of retail trade volume support the perception that the economy of western Kansas has weakened relative to the rest of the state over the past five years. Meanwhile, the metropolitan areas that include Kansas City, Wichita, and Topeka have captured an increasing share of Kansas retail trade.

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The purpose of the *Kansas Business Review* is to provide a forum for the dissemination of research studies and reports in the field of economics and business that would be of special interest and relevance to business persons, public officials, and academicians in Kansas and the Plains Region.

The Editorial Review Board welcomes submissions of original manuscripts as well as reports on research and opinion pieces. The style, however, should emphasize exposition rather than technical details. All submissions will be reviewed initially by the editorial staff and, when judged appropriate, will be sent to referees who are knowledgeable about the content.

Manuscripts for consideration should be typed, double-spaced, and submitted in triplicate. In general, length should not exceed three thousand words. Authors are reminded of the combined scholarly-practitioner orientation of the *Kansas Business Review*, which necessitates the contents being in a form readable by that audience.

Submit manuscripts to: Editor, *Kansas Business Review*, The Institute for Public Policy and Business Research, 607 Blake Hall, The University of Kansas, Lawrence, Kansas 66045.

From the Executive Director

This year we are celebrating the tenth anniversary of the *Kansas Business Review*. In 1977 the *KBR* was published by the newly formed Division of Business and Economic Research under the direction of Professor Darwin Daicoff. The chancellor at the time, Archie R. Dykes, wrote a letter introducing the *Kansas Business Review* as "a significant expression of the University's philosophy of public service." We hope that the *KBR* has indeed served Kansans well over the past decade.

That first issue also began the tradition of the Institute's involvement in state economic issues: The first article was taken from the January 1977 Economic Outlook Conference, and it discussed how the growing manufacturing sector in Kansas had already increased the state's sensitivity to national economic conditions. This opening article presaged the 1986 *Kansas Economic Development Study*, the culmination of a year of concentrated research at the Institute on the Kansas economy. In the spring of 1986, we published the executive summary of that study, also known as the *Redwood/Krider Report*, in the *Kansas Business Review*, and subsequent issues have maintained this focus on economic development as Kansans have strived to overcome recent economic adversity.

There is another line of continuity between the first issue and this issue of the *Review*. In his introduction, the Chancellor invited the readers of the *Kansas Business Review* to submit their own contributions for possible publication in order to further the creative exchange of ideas about common issues. Throughout the past years we have been pleased to offer articles from business practitioners and from faculty of other Kansas and regional universities. We have remained dedicated to the ideal of providing a forum for ideas and an outlet for Kansas related research.

The mission of the Institute for Public Policy and Business Research is a clear one. It is to undertake basic and applied research on economic, business, and public policy issues affecting Kansas and bring these results to Kansans so that they might be better informed about them. Largely due to the support of Chancellor Gene Budig and Vice-Chancellor Frances Horowitz (Research, Graduate Studies, and Public Service), the research capacity of the Institute to underpin this mission has been steadily expanded. Through a combination of in-house and sponsored research, we have a comprehensive agenda of Institute studies to present in the *KBR* this year, and we look forward to publishing on major issues facing Kansas in the years ahead.

In celebrating the tenth anniversary of the *Kansas Business Review*, we renew our commitment to service, research, and the creative exchange of ideas.

Sincerely,

Tony Redwood

Anthony Redwood
Professor of Business and
Executive Director, Institute for
Public Policy and Business Research

Of Special Interest to the Small Business Owner and Operator . . . *

Using Federal Tax Policy to Influence Firm Locations: Two Examples of the Impact on Kansas Communities

Pat Oslund

Pat Oslund is a research economist at the Institute for Public Policy and Business Research. Her study was commissioned by the City of Hays, Kansas.

Introduction

The purpose of this study is twofold. The first part of the study is quite narrow in focus. During their attempts to attract firms to Hays, Kansas, community leaders learned that many of the types of firms they had tried to bring to Hays were choosing locations in Puerto Rico. This led to an inquiry on the part of community leaders into the factors that make Puerto Rico an attractive location. The first half of the study examines the advantages that Puerto Rico enjoys under U.S. tax law. More broadly, the first half of the study looks at Puerto Rico as an example of export based growth. The study further develops a methodology for determining the costs of production at alternative plant locations (for example, Kansas or Puerto Rico). Communities could use this framework to help target the types of industries they try to attract.

The second half of the study moves beyond the special case of Puerto Rico and asks whether financial incentives, particularly at the federal level, could aid rural areas such as Hays in their attempts to revitalize their economies. The study examines tax policies using a cost-benefit approach and asks whether tax incentives are a cost effective means of achieving rural development.

Rural communities in Kansas and other states have faced an unfortunately large array of problems in the 1980s. Underlying economic forces such as the decline of agriculture, low prices in oil, gas, and other energy-related industries, and the shift of the U.S. economy away from manufacturing toward service industries have left many rural residents with little choice but to migrate to urban and suburban communities. In an attempt to preserve and create jobs within their localities, rural community leaders have increased their efforts to stimulate economic development.

Regional economic development is a cooperative effort of community leaders, representatives of government from various levels, and private firms to stimulate growth in income and employment within a locality, state, or even a small country. It involves efforts to attract and retain firms, to increase the utilization rate of regional resources such as land and labor, and to improve the productivity of human resources through training and education. Successful economic development increases the amount of value added within a community. Value added is the difference between the cost of inputs and the price of outputs.

Economists recognize two major sources of economic growth that help to explain the development of regional economies and of small national economies: export growth and import substituting growth. The source of export growth could be an existing firm or a new firm that has been attracted to the region. In either case, the production of the new exports creates employment and income. The new export earnings circulate within the region and further stimulate employment in firms serving the local community. The total result of this process is referred to as a multiplier effect.

Results from the Kansas Long Term Model, a project of the Institute for Public Policy and Business Research, indicate that each dollar of Kansas exports (to other states or to foreign countries) stimulates approximately one additional dollar of output within Kansas. Hence the multiplier for changes in Kansas exports is approximately 2, although it varies according to the type of export. Multipliers for value added are smaller than those for total output. The multipliers for value added generated by each additional dollar of Kansas exports vary between 60 cents for automobiles and $1.50 for services.

Import substituting growth occurs when a region produces goods to replace goods that were previously imported. When the production of these goods takes place locally, new jobs are created within

* This article is sponsored by the U.S. Small Business Association and the Kansas Small Business Development Centers.

the community. Again, some of the earnings from these jobs recirculate inside the community to further stimulate employment.

Possibilities for import substitution are more limited than those for export promotion. The number of consumers in a regional economy is generally not large enough to justify production of most manufactured consumer items on a local basis. Consumers will continue to buy items such as televisions and automobiles from large manufacturing firms that are usually located outside their home communities. On the other hand, significant opportunities may exist for input suppliers to set up local manufacturing enterprises in order to serve local users. For example, a parts manufacturer may establish itself near where airplanes are being produced.

As the above discussion indicates, regional economic growth in a free market economy depends critically on the decisions of firms to locate, invest, and expand. The factors that influence firm location are complex and multifaceted. Table 1 lists some of the considerations that a firm manager must take into account in deciding whether to locate or expand at a particular site. Most of these considerations apply equally well to decisions about U.S. locations and about foreign locations.

For each general category in Table 1, it is possible to design policies that would make a region, state, or community more attractive as a firm site. While the concentration of this study will be on tax structures, this is not intended to diminish the importance of the role of government in other development activities.

Tax Incentives Affecting Puerto Rico

A growing controversy has surrounded the use of tax incentives by state and local governments to attract industries. Some of the elements of this controversy are discussed later in this study. While the evidence on the effectiveness of state and local tax incentives is mixed, a clear example, that of Puerto Rico, indicates that firms respond to strong tax incentives initiated at the federal level.

Table 1
Factors Influencing Firm Location

Market Factors

- What are the costs of distribution to present markets from the location under consideration?
- What are the possibilities of establishing new markets served by the new plant site?

Resource Factors

- At what cost can necessary supplies be delivered to the potential plant site?
- Can suppliers be established near the plant site?
- Is financing for the proposed investment available, and if so, at what cost?
- What is the cost of energy?

Labor Factors

- What are the prevailing wages for various occupations in the area?
- At what wage can new employees be hired? (This may differ from the prevailing wage.)
- Does the labor force have a positive attitude toward productivity?
- What are the skills available in the local labor force?
- What is the attitude toward unions?

Site Factors

- What are construction costs at the proposed site, including necessary improvements?
- What types of regulations does the state or local government impose on producers?
- What kind of service from utilities is available?
- Will the local government bear some of the cost of site improvements? (roads, sewers, etc.)

Governmental Factors

- What is the structure of state and local taxes, both on income and on property?
- What kinds of state and local tax incentives are available?
- What types of state and local programs other than tax incentives are available to encourage business?
- Are there any special federal benefits available at this site?
- What kinds and quality of public services are provided?

Quality of Life Factors

- What quality of education is available?
- What cultural and recreational opportunities are nearby?
- What is the climate like?
- Is the community safe and attractive?

Source: Many of these factors are discussed in Roger Schmenner, *Making Business Location Decisions*.

The Commonwealth of Puerto Rico has legal status as a possession of the United States. As such, it is entitled to its own system of taxation. The tax laws of Puerto Rico are similar to U.S. tax laws, providing graduated tax rates for corporations and individuals. While Puerto Rico is not directly subject to U.S. income tax laws, the United States and Puerto Rico have cooperatively made provisions affecting affiliates of U.S. based firms that locate production in

While the evidence on the effectiveness of state and local tax incentives is mixed, a clear example, that of Puerto Rico, indicates that firms respond to strong tax incentives initiated at the federal level.

. . . the tax treatment of profits earned in Puerto Rico (and other U.S. possessions) is more favorable than the treatment of profits earned in foreign countries.

Puerto Rico. Puerto Rico partially exempts many of these firms, particularly those in manufacturing, from income and property taxes. For 1982, it is estimated that all Puerto Rican taxes absorbed only about 5 percent of the profits of U.S. based firms operating in this territory. Furthermore, the firms generally owe no tax on profits reinvested in Puerto Rico. The United States, for its part, allows much of the profit from U.S. affiliates operating in Puerto Rico to be repatriated to the United States without income tax liability. In this respect, the tax treatment of profits earned in Puerto Rico (and other U.S. possessions) is more favorable than the treatment of profits earned in foreign countries.

Special tax treatment of U.S. possessions has been characteristic of U.S. tax law since 1921. The Revenue Act of 1921 provided that a corporation that derived 80 percent of its income from business in a possession and 50 percent of its income from "active trade" such as manufacturing could bring income back to the United States without taxation. These provisions were continued until 1976, when they were replaced by Internal Revenue Code Section 936, known as the "possessions corporation system of taxation." Under the 1976 provisions, affiliates of U.S. firms operating in Puerto Rico or other possessions (known as possessions corporations), can bring profits into the United States free of taxes if the profits are earned through active business or trade (primarily manufacturing), or from investments of funds originally earned in active business or trade. The purpose of Section 936 is to

> assist the U.S. possessions in obtaining employment producing investments, while at the same time encouraging those corporations to bring back to the United States the earnings from these investments to the extent they cannot be reinvested productively in the possession (U.S. Code Section 936).

Treatment of Intangible Assets

The provisions enacted in 1976 left some ambiguity about the treatment of income from intangible assets such as patents and formulas that had been developed and paid for in the United States. There is clear evidence that many U.S. firms tried to increase the amount of their exempt income by shifting productive assets to their affiliates in Puerto Rico. This was particularly true in the case of firms producing high-technology products, which include machinery, electronics, scientific instruments, and chemicals. Table 2 shows that the structure of the manufacturing sectors in both the United States and Puerto Rico shifted toward high-technology products between 1977 and 1982, but the shift in Puerto Rico was much more pronounced.

Firms producing high-technology products were growing at much faster rates in Puerto Rico than in the United States for the period covered by the data. This suggests that firms that had high profits stemming from the results of research and development were attracted to Puerto Rico by the potential to escape taxes on part of these profits. Other evidence supports the conclusion that the returns on research and development were being shifted to Puerto Rico by shifting plant locations. Table 3 shows that for the Puerto Rican pharmaceutical industry, wages and salaries account for a much smaller percentage of value added than they do in the United States. Even after adjusting for differences in the wage rate in the two countries, it appears that returns to assets (real property such as machinery and buildings, and intangible property such as patents and trademarks) are larger in Puerto Rico that in the United States. Assuming that returns to real assets such as equipment and buildings are similar, the difference is due to returns on intangibles.

In 1982, new provisions were added to tax code section 936 to limit the ability of firms to shelter income from intangible assets. A firm operating in Puerto Rico must now meet one of two provisions to prevent full taxation of its income from intangible assets when such income is brought into the United States.

The new provisions test whether the firms have significant business (rather than purely financial) activities in a U.S. possession. The first of the tests requires that a firm incur production costs for resources other than materials equal to at least 25 percent of the total value added of the firm and its affiliates (including its U.S. affiliates). Alternatively, the second test requires that 65 percent of the total

Table 2
Manufacturing Shifts to High Technology

	Value Added Growth (in millions of dollars) 1977	1982	Percent Growth 1977-1982
Puerto Rico			
Total Manufacturing	$ 4,097	$ 8,605	110.0%
High-Tech Manufacturing	2,297	6,010	161.6
Non-High-Tech Manufacturing	1,800	2,595	44.2
United States			
Total Manufacturing	585,166	824,118	40.8
High-Tech Manufacturing	193,071	297,862	54.3
Non-High-Tech Manufacturing	392,095	526,256	34.2

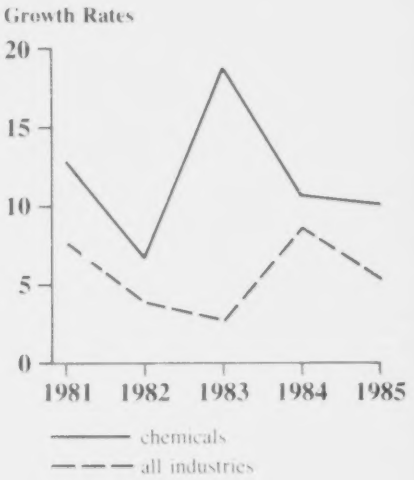
Source: *Census of Manufactures*, 1982, U.S. Bureau of the Census; *Economic Census of the Outlying Areas, 1982*. The U.S. Bureau of the Census surveys the economies of U.S. possessions every five years. 1982 is the latest year for which this important census data is available. For this reason, much of the data throughout this report is based on 1982 statistics.

Table 3
Composition of Value Added in the Pharmaceutical Industry, 1982

	Value Added	Wages & Salaries	Wages & Salaries ÷ Value Added	Asset Returns ÷ Value Added
	(in millions)			
United States	$16,981	$3,965	23.4%	76.6%
Puerto Rico	3,276	220	6.7%	93.3%
Puerto Rico (adjusted for wage rates)	3,276	315	9.6%	90.4%

Source: Calculated from *Census of Manufactures*, 1982, and *Census of Outlying Areas*, 1982.

Figure 1
The Chemicals Industry Outstrips All Other Puerto Rican Industries



Source: *1987 Statistical Abstract of the United States.*

labor costs of the firm and its affiliates be incurred in the possession. For firms that satisfy one of these two requirements of "significant business presence," a set of rules has been implemented that reduces but does not eliminate the protection of income on intangible assets from taxation:

Rule 1. The possessions corporation can elect to share in the costs of research and development of assets such as formulas and patents. The equation below summarizes the cost sharing calculation.

Cost Share Payment = (Sales/Total) × Research

Sales: Sales of goods produced in the possession to parties outside the firm and its affiliates.

Total: Total sales of the firm and its affiliates of goods within the same three-digit S.I.C. code to third parties.

Research: Total expenditures on research of the firm and its affiliates on goods within the S.I.C. code of the possession firm's product.

The cost share rule applies to intangible assets developed within the United States. The possessions corporation would owe no cost share on intangible assets developed solely within Puerto Rico.

Rule 2. Profit Split. As an alternative to sharing the cost of developing assets, the possessions firm may elect to share the combined profits of the firm and its affiliates for tax purposes. Total profits due to sales of products produced in the possession to third parties outside the group (possessions firm and affiliates) would be calculated. These profits would be divided 50/50 between the possessions firm and its U.S. affiliates. The profit split plan gives the possessions corporation the opportunity to remit 50 percent of the earnings on intangible assets without U.S. tax liability.

The changes enacted in 1982 appear to reduce some of the benefits that U.S. firms derive from locations in Puerto Rico. Data on the taxes paid by possessions corporations and on the deductions they claim are available only through 1982, so it is not possible to fully assess the results of the tax changes.[1] However, some evidence exists that firms producing high-technology products, particularly pharmaceuticals, have continued to expand in Puerto Rico. The chemical industry in Puerto Rico is dominated by pharmaceutical manufacturers. Most of these are affiliates of U.S. based firms. Figure 1 shows that over the time period 1981-1985, incomes (profits, wages, etc.) produced in the chemical industry continued to expand at a rate outstripping the Puerto Rican economy as a whole. This can be interpreted as indicating continued commitment on the part of the U.S. based possessions corporations.

Impact of the U.S. Tax Provisions on Puerto Rico

Puerto Rico is a small country with a population of a little more than three million. During the period 1960 to 1985, the labor force of the country has expanded rapidly, by about 54 percent. Employment has increased much less rapidly, by only 37 percent. Private employment has grown even more slowly, only about 20 percent, with the slack taken up by growth in the government sector. Puerto Rico has followed a pattern typical of many developing countries, with declining employment in agriculture and expanding employment in manufacturing and government.

As of 1982, U.S. affiliated firms eligible for Section 936 tax credits employed

The changes enacted in 1982 appear to reduce some of the benefits that U.S. firms derive from locations in Puerto Rico. . . . some evidence exists that firms producing high-technology products, particularly pharmaceuticals, have continued to expand in Puerto Rico.

It appears that the tax incentives that apply to Puerto Rico are a very inefficient way for the U.S. government to encourage economic growth.

about 81 thousand workers. This amounts to 11.3 percent of employment in Puerto Rico, with an astounding 60.6 percent of that in manufacturing. Average compensation of these workers was $14,070 in 1982, 27 percent higher than the compensation of the average Puerto Rican worker. Most of the goods produced by the "936" firms are sold either to the United States or to foreign countries; the firms compose a major portion of Puerto Rico's export base. The income of the workers employed in the "936" firms recirculates in the Puerto Rican economy. Data cited in *The Operations and Effect of the Possessions Corporation System of Taxation* suggest that multipliers for employment of "936" firms average a little over 2. If a multiplier of 2 is applied to the wages of the workers in the "936" firms, the direct and indirect impact of the firms amounts to over 28 percent of Puerto Rico's labor earnings.

Costs of the Tax Provisions

What is seen as a tax benefit from the point of view of a firm is seen as a tax expenditure[2] from the point of view of the Treasury. The U.S. Treasury Department publishes estimates of the tax expenditures due to the possessions system of taxation. The estimates are made under the assumption that in the absence of the Section 936 provisions, production would take place in the United States rather than in Puerto Rico. The latest available estimates, for 1982, indicate that these tax costs are substantial. These estimates are reproduced in Table 4. Even if the 1982 provisions on intangible assets reduce the tax benefits to the firm (or costs to the Treasury) by 50 percent, as might be the upper limit case for a possessions firm choosing to split its profits with its U.S. affiliate, tax benefits for high-technology-based industries still amount to well over half of the amount of wages the firms generate in Puerto Rico. For pharmaceuticals, the largest of the "936" industries, the tax benefits would amount to at least 150 percent of employee earnings. It appears that the tax incentives that apply to Puerto Rico are a very inefficient way for the U.S. government to encourage economic growth.

Costs of Production, Kansas and Puerto Rico

The discussion of the tax treatment of Puerto Rico indicates that U.S. tax policy has brought substantial benefits to Puerto Rico, although at a large cost to the U.S. Treasury and hence the general taxpayer. Less easily quantified effects occur because the tax policy distorts the locational decisions of firms. Areas where an industry might have grown and prospered lose their natural advantage. In order to find out whether industrial development in a state like Kansas is affected by these tax distortions, two tasks are necessary. First, it is necessary to identify the industries in which Puerto Rico produces a large market share, that is, a large share of the combined U.S. and Puerto Rican output. Second, it is necessary to examine whether any of these industries would otherwise be targets for Kansas development. Whether Kansas could compete in these products in the absence of the Puerto Rican tax credits is an essential question.

On the whole, the Puerto Rican manufacturing sector produces less than half a percent of U.S. manufacturing output. However an examination of manufacturing industries reveals three industries where the ratio of Puerto Rican output to U.S. output is at least six times the average for all industries (see Table 5). Of these industries, pharmaceuticals has by far the largest market share. Puerto Rico consumes only about 2 percent of its own output in these industries. This means that the bulk of Puerto Rico's output is competing with U.S. firms for markets in the United States and in foreign countries.

In an article in the *Kansas Business Review*,[3] Robert McLean identifies industries that are likely to be attracted to Kansas locations. He advises people interested in economic development to concentrate their efforts on industries that already have reasons to find Kansas a good location. Drugs and instruments are two items on his list of potential immigrants, primarily because they use goods produced in Kansas as inputs.

The *Kansas Economic Development Study*, published by the Institute for Public Policy and Business Research, also addresses the issue of which industries a region should target for development. The study develops a list of about 30 industries that might find Kansas to be a good location. All of the industries in Table 5 are mentioned as good candidates for growth in Kansas. Yet communities such as Hays have had difficulties retain-

Table 4
Costs and Benefits of Tax Provisions Governing Affiliates of U.S. Based Firms Operating in Puerto Rico, 1982

	Compensation per Employee	Tax Benefit to the Firm per Employee	Tax Benefit ÷ Compensation
Apparel	$ 8,954	$ 3,030	33.8%
Chemicals	21,145	62,580	296.0
Drugs	20,765	69,200	333.3
Metal Products	14,824	12,157	82.0
Machinery	15,953	22,205	139.2
Electrical and Electronic	13,314	13,931	104.6
Scientific Instruments	13,862	16,545	119.4

Source: *The Operation and Effect of the Possessions Corporation System of Taxation*, Fifth Report, 1985 (1982 data).

Table 5
Puerto Rican Output Compared with U.S. Output

Industry	Puerto Rican Output ÷ U.S. Output
All Manufacturing	0.45%
Pharmaceuticals	13.27
Electronic Components	3.00
Electrical Equipment	3.44
Medical Instruments	6.03%

Source: Calculated from *Census of Manufactures*, 1982, and *Economic Census of the Outlying Areas*, 1982.

ing these industries. For electrical equipment, pharmaceuticals, and medical instruments and supplies, total Kansas employment fell by 744 workers, or 11.7 percent just between 1982 and 1985.[4]

Would firms in these industries expand in Kansas locations if they were not put at a disadvantage by federal tax policies? As a first approach to answering this, the costs of doing business in Puerto Rico and in Kansas have been calculated for two products, pharmaceuticals and medical instruments and supplies.

The method we used depends primarily on data published by the federal government. The widespread availability of such data makes it feasible for people interested in economic development to follow a similar approach to get an idea of whether their community has a cost advantage in producing a given type of commodity (for example pharmaceuticals) in comparison with other possible production sites. Additionally, the method presented in this section could be used to provide rough estimates of the size of a tax incentive that a community might need to offer to offset a cost advantage held by some alternative production location.

Costs of doing business fall into four categories: labor costs, materials costs (including energy), transportation costs, and capital costs. Estimates of each type of cost can be constructed from government data. A comparison of the basic production costs in alternative locations indicates the firm's most profitable locational choice in the absence of differential taxes or community attributes. To compare production cost data between the two sites, an adjustment is made for the difference in value of a ton of output in the United States and in Puerto Rico.

The *Commodity Transportation Survey* published by the Bureau of the Census provides the best available source of information on shipping weights and the value of shipments. Unfortunately, this survey was last published in 1977. Unpublished data available from the Bureau of the Census update this survey to 1983. Values per ton from 1983 can be adjusted to 1982 values using price indexes from the *U.S. Industrial Outlook*. Additional data on commodity shipments come from Department of Commerce publications on imports and exports. Table 6 shows estimates of the dollar value per ton for pharmaceuticals and instruments.

Notice the large difference between the value per ton of U.S. products and that of Puerto Rican products in Table 6. The large differences in shipment values substantiate that high value production has been shifted to Puerto Rico, possibly to shelter income on intangible assets from taxation.

Labor and Material Costs

Once value per ton has been established, it is straightforward to convert the production data in the *Census of Manufactures* and the *Economic Census of the Outlying Areas* into cost per ton measures. The 1982 *Census of Manufactures* suggests that compensation per employee in Kansas is about 98 percent of the U.S. average. However, the wage structure in *rural* Kansas is considerably different than the U.S. average, with compensation per employee only 80 percent of that for the United States. An adjustment for different labor costs was made for the "rural Kansas" calculations in Table 7. Labor and material costs per ton of production are considerably higher in Puerto Rico than in the United States. Some of the cost difference may be explained by differences in the types of products in Puerto Rico and in the United States. The state-of-the-art products of Puerto Rico may require higher material costs than generic products produced in the United States. But even if adjustments are made for materials costs, it appears that basic costs are actually higher in Puerto Rico than in U.S. locations. Lower compensation per employee in Puerto Rico than in the United States is more than counterbalanced by lower productivity.

Transportation Costs

Transportation costs are important considerations affecting a firm's profits. Data on transportation costs are available from the *Commodity Transport Survey* and from *National Transportation Statistics*. The transport survey provides data on the location of markets for each of about a thousand commodities. As mentioned previously, this survey has not been completely updated since 1977. The Bureau of the Census, however, has provided some unofficial data updating part of the survey to 1983. The unpublished data were used to calculate the distribution of markets for pharmaceuticals and for instruments. The consumption shares of each of nine census regions were calculated as percentages of U.S. consumption. The mileage from a central Kansas location to the major city in each of the regions was calculated and weighted by the consumption shares to find the average shipment distance from Kansas to national markets.

Table 6
Value per Ton of Output, United States and Puerto Rico, 1982

	United States	Puerto Rico
Pharmaceuticals	$ 8,598	$35,497
Medical Instruments and Supplies	14,340	28,972

Sources: Unofficial data from the Bureau of the Census, *Survey of Manufactures*, 1982, *U.S. Industrial Outlook*, 1986. These calculations could also be done using information from the less current 1977 *Commodity Transport Survey*, *U.S. Trade with Puerto Rico and U.S. Possessions*, 1982; *Economic Census of the Outlying Areas*, 1982.

. . . shipping costs from Puerto Rico are only slightly higher than shipping costs from Kansas.

Table 7
Costs per Ton of Output, 1982

	Costs per Ton		
	U.S.	Rural Kansas	Puerto Rico
Pharmaceuticals			
Labor	$1,381	$1,105	$ 1,840
Materials	2,697	2,697	8,228
Total	4,358	3,802	10,068
Medical Instruments and Supplies			
Labor	$3,289	$2,632	$ 4,194
Materials	5,226	5,226	8,699
Total	8,515	7,858	12,893

Source: Calculated from Table 6 and *Census of Manufactures*, 1982, and *Economic Census of Outlying Areas*, 1982.

Table 8
Transportation Costs to U.S. Markets

	Cost per Ton	
	From Kansas	From Puerto Rico
Pharmaceuticals	$138	$199
Instruments	198	229

Source: *Rand McNally 1986 Road Atlas*, unofficial census data, *Commodity Transportation Survey, National Transportation Statistics, 1984.*

Finally, mileages were multiplied by transportation costs per mile to get total shipment costs. Shipment costs per mile were higher for instruments than for pharmaceuticals since a larger percentage of instruments were shipped by air. Similar transport cost calculations were made for shipping goods from Puerto Rico to the United States (to the Port of New York) and then distributing the goods to U.S. markets. As Table 8 shows, shipping costs from Puerto Rico are only slightly higher than shipping costs from Kansas.

Capital Costs

Capital costs are the yearly costs a firm incurs due to using durable equipment and structures. Capital costs include interest charges due to the financing of plant and equipment and depreciation costs due to wear and obsolescence of equipment and structures. Capital costs are generally proportional to the size of a firm's stock of capital. To calculate the value of capital per worker, we used data from the *Census of Manufactures* and from *The Operation and Effect of the Possessions Corporation System of Taxation*. Capital stocks were measured as the gross book value of depreciable assets. Table 9 compares capital/labor ratios for Puerto Rico with those for the United States.

U.S. ratios are higher for both chemical and instrument manufactured products, by 8.9 percent for chemicals and by 24.0 percent for instruments. One possible explanation for this finding is that in response to the difference in wages between Puerto Rico and the United States, firms operating in Puerto Rico choose production techniques that use relatively more labor and relatively less capital. Nevertheless, the capital/labor ratio for the *whole* of Puerto Rico's export based manufacturing sector exceeds the average capital labor ratio for manufacturing in the United States. For 1981, the U.S. capital/labor ratio was about $35 thousand per worker while the capital/labor ratio for U.S. firms operating in Puerto Rico averaged $45,650. The difference in the average capital/labor ratios is due to the heavy concentration of Puerto Rico's exports in the chemical industry. This industry has one of the highest capital/labor ratios of any manufacturing industry. The concentration of Puerto Rico's export industry in such capital intensive products fails to take advantage of the abundant Puerto Rican labor force; unemployment in Puerto Rico has averaged over 20 percent throughout the 1980s.

Total Production Costs and Tax Credits

At this point, the total costs of production can be calculated in Puerto Rico and in the United States (see Table 10). Production would actually be cheaper in U.S. locations if it weren't for tax preferences. Table 11 uses the adjusted cost figures for Puerto Rico and for Kansas locations found in Table 10. In comparison with

Table 9
Capital Stock per Employee, 1981

	Capital Per Employee	
	United States	Puerto Rico
Chemicals and Allied Products (includes drugs)	$109,012	$99,735
Instruments and Related Products	22,160	17,420
All Manufacturers	35,000	45,650

Source: Calculated from *Census of Manufactures*, 1982, and *The Operation and Effect of the Possessions Corporation System of Taxation.*

Although recent legislation at the federal level has attempted to limit the shelter of intangibles, it appears that substantial tax benefits for "936" firms still remain. As a consequence, it is almost impossible for Kansas locations to compete for production of some goods, particularly some types of pharmaceuticals and medical instruments.

Puerto Rican locations, Kansas locations clearly have lower basic production costs for the two goods examined. However, the tax benefits received by firms in Puerto Rico put Kansas production at a disadvantage.

The cost estimates in Tables 10 and 11 can be used to give a rough estimate of the size of tax credits a Kansas community would need in order to offset the tax advantages received by U.S. firms operating in Puerto Rico. Offsetting tax credits have been calculated in terms of dollars per worker. To put itself on even ground with Puerto Rico, a Kansas community would need to supply incentives equivalent to $19,995 each year per worker for the medical instruments and $98,883 per worker in the pharmaceuticals industry. These amounts are very large and clearly outweigh the wages that workers in these industries would be paid.

Table 10
Costs of Production, United States, Rural Kansas, and Puerto Rico

Industry	Costs per Ton of Output			
	United States	Rural Kansas	Puerto Rico	Puerto Rico (adj.)**
Pharmaceuticals				
Labor Costs	$1,381	$1,105	$ 1,840	$ 1,840
Materials	2,697	2,697	8,228	2,697
*Capital	1,308	1,308	2,194	2,194
Transportation	varies	138	199	199
Total Production Cost		$5,248	$12,461	$ 6,930
Instruments				
Labor Costs	$3,289	$2,632	$ 4,194	$ 4,194
Materials	5,226	5,226	8,699	5,226
Capital	800	800	1,219	1,219
Transportation	varies	198	229	229
Total Production Cost		$8,856	$14,341	$10,868

Pharmaceuticals Employee Years/Ton: U.S. = .06 P.R. = .11
Instruments Employee Years/Ton: U.S. = .19 P.R. = .35

*Capital cost estimated as (0.2 × Capital Stock).
**Adjustment for materials cost assumes that cost per ton of materials is the same in both locations.

Table 11
Cost Advantages Before and After Tax Credits

	Medical Instruments	Pharmaceuticals
Basic Cost Advantage of Kansas Location	$2,012/ton	$1,682/ton
Less Federal Tax Credit	5,791/ton	7,612/ton
Advantage of Puerto Rican Locations with Tax Credit	$3,779/ton	$5,930/ton

Conclusions and Recommendations

The above analysis has shown the considerable tax advantages that firms producing certain high-technology types of products enjoy by choosing Puerto Rican locations. The major source of these advantages is the ability of firms to shelter some of the income derived from intangible assets from U.S. corporate taxes.

Although recent legislation at the federal level has attempted to limit the shelter of intangibles, it appears that substantial tax benefits for "936" firms still remain. As a consequence, it is almost impossible for Kansas locations to compete for production of some goods, particularly some types of pharmaceuticals and medical instruments. Ironically, some authors have found that Kansas locations would otherwise be well suited for these kinds of production.

While changes in the tax code would probably benefit cities such as Hays, Kansas communities are unlikely to be able to achieve major revisions of tax laws governing the operation of U.S. firms in Puerto Rico. First, only a limited number of rural communities would be interested in such tax changes; while this issue is a special importance to Hays, very few other communities are faced with exactly the same concerns. It would be difficult for Hays to find a political coalition large enough to effect legislative change. Second, elimination of Puerto Rico's tax advantages would have a profoundly disrupting effect on the island's economy. A large percentage of its export

In most cases, state and local tax incentives appear to have little or no effect on business decisions to invest.

base, and as much as 28 percent of its manufacturing employment, depend on the activities of U.S. based firms. Congress would be unlikely to make such a disruptive change.

Can Kansas communities hope to attract pharmaceutical and medical instruments firms in the face of existing tax laws? Changes in the tax code made in 1982 may eventually reduce the flow of investment to Puerto Rico. Furthermore, lower corporate tax rates legislated in 1986 reduce the incentives for firms to engage in tax avoidance. Nevertheless, firms will probably retain some ability to shelter income from intangibles.

There are still some niches in the markets for pharmaceuticals and instruments that might be filled by Kansas locations. Small operations run by locally or regionally based business people would be unlikely to relocate offshore. Additionally, firms producing generic products may be attracted to Kansas locations, particularly to communities with readily available work forces. These firms derive little income from intangible assets, and hence have less incentive to locate outside the United States.

A Broader Look at Tax Incentives

The first half of this report dealt with the specific problem of tax incentives benefitting Puerto Rico. Although the tax credits have had an extremely beneficial effect on Puerto Rico's ability to attract high technology production, they have severely distorted the locational decisions of firms. The tax credits significantly impede the ability of Kansas communities to compete for firms in certain industries, particularly pharmaceuticals. However, the industries most affected by the tax treatment of Puerto Rico constitute only a small part of the manufacturing base of rural Kansas.

Removal of the Puerto Rican tax incentives would help only a small segment of rural communities. Recognizing this, the next section of this report considers more general concerns of rural development: Are tax incentives in general are an effective means of encouraging the location of industry in rural areas? The report reviews the literature on state tax incentives and then looks at an example of a possible incentive program at the federal level. The report concludes with some general comments on tax incentives and rural development.

Tax Incentives and Economic Development

During the last decade, the role of government in attracting and retaining industry has been a topic of heated discussion for policy makers and business people alike. Recently, several studies have examined whether tax incentives such as investment tax credits and corporate income tax reductions are effective tools for attracting jobs and industry to a region. Both Seidman and Kieschnick[5] provide excellent summaries of these studies. The results across studies seem to be fairly consistent. In most cases, state and local tax incentives appear to have little or no effect on business decisions to invest. For example, a survey done by Kieschnick indicates that only 3.3 percent of new firms and 6.6 percent of new branch plants found tax incentives crucial to their locational decisions. The same survey indicated that for expanding plants, tax incentives were insignificant.

While most authors have conducted their studies in qualitative terms, asking whether incentives are or are not important locational factors, Bartik[6] reaches more quantitative estimates of the impact of regional tax incentives. He finds that a 10 percent decrease in a state's corporate tax rate (say from 5 percent down to 4.5 percent) will increase the number of new plants opening within the state by about 2 to 3 percent over a six-year period. For Kansas, which attracted 73 new manufacturing plants in 1986,[7] this would mean about two additional firms and about four hundred thousand dollars in additional wages over six years. Bartik concludes that tax incentives have a modest impact on firm location.

Several facts explain why state and local tax incentives are weak or at best moderate influences on a firm's decision of where to locate.

1. Firms often open branches near their existing plants so that some management and facilities can be shared. A region where manufacturing has been historically weak can expect fewer branch locations than an existing manufacturing center.

2. Labor costs and energy costs are usually much larger shares of a firm's budget than are state and local taxes. Hence firms will often be more concerned that a potential plant site provides favorable labor and energy costs and sufficient supplies of these resources than that the location offers tax incentives.

3. State and especially local taxes may be seen by firms as indirect payments for public services such as sewers, roads, and education. A perceived benefit to a firm in the form of lower taxes may be in part offset by a perceived cost in terms of diminished public services.

4. Tax benefits that are attached to particular site locations (such as Enterprise Zones) may become capitalized in the value of land at these locations.[8] This means that firms that are attracted to an area because of tax incentives bid up the price of land in the area. The increase in land values then makes the site less attractive to other potential migrants, terminating the flow of firms into the area.

5. Since state taxes are deductible when determining income for federal corporate income tax, when state taxes fall, federal deductions also fall, increasing a firm's federal tax liability. Until recently, this meant that most state tax incentives were as much as cut in half, given that the highest marginal corporate income tax rate was 46 percent. Under the recent changes in the federal tax laws, the highest marginal corporate income tax rate has been reduced to 34 percent, meaning that the effect of state and local tax incentives is cut by about one third.

Although evidence shows that tax incentives at the state and local level are weak, or at best modest, the example of Puerto Rico indicates that large tax incentives at the federal level strongly influence firm location. Tax incentives legislated by the government of Puerto Rico preserve these tax breaks; most of the profits of U.S. firms producing for export are subject to very low Puerto Rican Commonwealth tax rates.

Given the current concern of the federal government with budget deficits, it would be infeasible for similar tax incentives to be extended to economically depressed rural areas. Whether modestly sized federal tax incentives could help stimulate investment and jobs in rural areas is an open question. A major goal of this part of the report is to design an example of such a program and to evaluate its potential impact, both on rural regions and on the federal budget.

Rural communities are a concern because of the large gap in income that exists between rural and metropolitan areas. A recent publication of the Federal Reserve Bank of Kansas City notes that in 1984, per capita income in metropolitan counties stood at 14 thousand dollars; in rural counties, per capita income was four thousand dollars less, averaging about ten thousand dollars. The trends of rural and metropolitan income show this gap widening, both nationally and in the Tenth Federal Reserve District, which includes Kansas. For the period 1979 to 1984, real per capita income grew by 1 percent in metropolitan areas of the Tenth District, while real per capita income fell by 0.1 percent in rural areas. Some of the rural-urban gap is explained by the decline of agriculture and the oil and gas industries in rural areas. But manufacturing, which generates 40 percent of income in rural areas nationally, has also grown much more slowly in rural than in urban areas. Unemployment and underemployment are becoming increasing problems throughout the rural United States.[9]

In response to rural economic decline, the pace of migration out of rural counties has risen, with about half of rural counties losing population between 1983 and 1985.[10] But rural residents displaced from their jobs resist migration, as shown by an Iowa study.[11] This study showed that 75 percent of farmers forced off their land have remained in rural areas, although with severely lower standards of living. As per capita income in rural counties declines, the ability of local governments to provide essential services such as roads and sewers is strained, reducing the standard of living in these counties even further.

Drabenstott distinguishes two possible approaches to the problem of rural decline. Transitional policies intend to ease the personal hardships caused by the decline of rural areas. Such policies concede that rural areas will continue to lose jobs and income. The policies are intended to help workers, and to a lesser extent, communities, adjust to change. Examples of such policies are retraining programs for farmers, transfer payments to supplement low rural incomes, and support for schools and public health facilities in communities that no longer have a tax base sufficient to provide these essential services. In contrast, rural development policies hope to stimulate economic growth in rural areas so that residents will not be forced to migrate and so that communities themselves can provide appropriate public services. Examples at the federal level include investment in infrastructure such as highways, which make rural areas more competitive, and education programs, which improve the quality of rural labor resources. Tax incentives for business initiation and expansion could conceivably become part of a rural development strategy.

The remainder of this report examines the costs and benefits of a tax incentive for firms in rural areas. Rural areas are defined as counties that do not have a city with a population over 50 thousand. Tax incentives may take on many forms. For example, corporate income taxes may be reduced or abolished, property taxes may be rebated, or investment may be granted special tax privileges. This study examines the particular example of an investment tax credit applied to new and expanding rural businesses. A similar methodology could be used to explore the impact of other tax incentives.

Example of a Tax Incentive: An Investment Tax Credit

An investment tax credit allows firms to take a percentage of their expenditures on new capital as a deduction from their corporate taxes. For the United States as a whole, investment tax credits were an important part of federal tax legislation from 1982 to 1986. Under the 1986 federal tax reforms, investment tax credits were eliminated while at the same time, the marginal tax rate on corporate profits was reduced. This section of the report examines the effects of reinstituting and expanding federal investment tax credits for depressed rural areas. The credits would apply to machinery, equipment, and structures. The proposed tax credits are similar to suggestions that have been made for the establishment of Enterprise Zones. Enterprise Zones are particular geographic locations that are eligible for special tax considerations.

When firms are allowed an investment tax credit, they experience a reduction in the effective cost of capital. Part of the cost of the capital is "rebated" to the firms through lower taxes. A measurement of the impact of an investment on the cost of capital can be calculated applying the user cost formula elaborated in Appendix B of this report. A 20 percent investment tax credit reduces the user cost of capital 31.1 percent, from 17.1 percent to 12.5 percent per year.

The proposed investment tax credit makes capital cheaper for firms. Intuitively, cheaper capital should encourage more investment activities in the areas eligible for the credits. To estimate the quantitative impacts of cheaper capital, it is first necessary to distinguish the behavior of firms that are already located in rural areas from the behavior of outside firms that might migrate to the area.

Economists generally recognize two distinct responses to a decrease in the cost of capital. The substitution effect occurs as firms replace labor with the now cheaper machinery and equipment. The substitution effect causes firms to adjust their capital/labor ratios. The expansion

. . . the example of Puerto Rico indicates that large tax incentives at the federal level strongly influence firm location.

While the impact of an investment tax credit for depressed rural areas on the eligible region appears to be large, the impact on the entire nation is considerably smaller. Much of the new output will substitute for output being produced in other parts of the country.

effect occurs as firms increase their output as a result of lower overall costs. Due to the expansion effect, firms tend to use more of both capital and labor. The substitution and expansion effects are likely to happen simultaneously. The two effects both induce the firms to invest in more capital. The effects work in opposite directions on labor. However, most empirical evidence indicates that the overall effect on the number of workers hired is positive. Estimates of the overall effect of the investment tax credit on rural Kansas firms are calculated in Appendix C. The results are summarized in Table 12.

Under the assumptions made in Appendix C, the effects of the tax credit on rural employment appear large. However, the appendix cautions that the estimates for changes in capital, labor, and output should be considered upper limits on what might realistically occur.

While the impact of an investment tax credit for depressed rural areas on the eligible region appears to be large, the impact on the entire nation is considerably smaller. Much of the new output will substitute for output being produced in other parts of the country. While output in rural regions will rise, output in urban regions will fall. Only to the extent that the new output of rural regions is sold abroad can it really be considered a contribution to national growth. To find the impact on the federal budget, only 6 percent (the approximate percentage of manufactured goods exported) is considered a net contribution to output. More optimistically, the amount of output that is a net contribution to national output will probably have a multiplier effect of about 2.

To simplify the analysis, it is assumed that the initial impact of the tax policy change is offset by a decrease in federal government spending; this means that sacrifices are made elsewhere in the economy to put the plan into effect. Budgetary impacts of the tax policy are illustrated in Table 13.

Over a 10-year period, the program would cost the U.S. Treasury about $67 million in lost revenues as existing Kansas firms apply the investment tax credit. In order to prevent a rise in the federal budget deficit, tax increases or federal spending decreases would be necessary. The program would significantly increase jobs in rural areas. However, the expanding rural firms would in part displace existing firms in areas not qualifying for the tax credits. Indirectly, a large number of the new jobs would be shifted from urban areas.

In addition to stimulating local firms, the investment tax credits would have an effect on firm migrations. Some estimate of the magnitude of firm migrations can be calculated from the study done by Bartik.[12] He estimated that a 10 percent decrease in state income taxes increases the number of new plants by 2 to 3 percent over a six-year period, or between 0.3 percent and 0.5 percent each year. For the time period of Bartik's data, a 10 percent decrease in state taxes corresponded to only about 0.2 percent decrease in the user cost of capital. The decrease in the user cost of capital brought about by an investment tax credit is about 150 times this much.

Extending Bartik's figures, the number of new plants would increase between 45 percent and 75 percent per year, or, on

Table 12
Direct Effects of a 20 Percent Investment Tax Credit on Expanding Firms: Results for Rural Kansas Counties

	Amount of Increase	
Increased Capital Stock:	$ 1,365 million	46.7%
Increased Number of Workers	11,060 workers	15.6%
Increased Output	$ 2,790 million	23.1%

Table 13
Budgetary Impacts of a 20 Percent Investment Tax Credit for Expanding Kansas Firms (in millions of dollars)

Initial Cost of Investment Credit	$273
Tax Collections Due to New Output (over ten years)	− $206
Net Tax Cost	$ 67

Tax cost due to investment credit calculated as 20 percent × (change in capital).

Yearly tax collections calculated as (average tax rate on all value added (25 percent)) × (value added as a percentage of output (37 percent)) × (percent of new output which is a net contribution nationally (6 percent)) × (multiplier effect (2) × change in output ($2,790 million). Tax collections are then converted to present value terms, calculated for ten years. Discount rate for present value calculations = 10 percent.

An investment tax credit would be an effective way of retaining and stimulating jobs in rural areas. Most of the jobs created, however, would be shifted from urban areas.

average, 60 percent per year. Since in 1985 about 50 percent of new Kansas firms (a total of 57) were located in rural counties, a 60 percent increase in this total would amount to about 35 additional rural Kansas firms per year. New Kansas firms averaged about 0.5 million dollars each in new capital and 23 workers each in new labor. An additional 35 firms in rural Kansas would bring in approximately 17.5 million dollars in new capital and would employ in the range of eight hundred new workers. This represents a 1.1 percent direct increase in manufacturing employment in rural Kansas. The new employees would cause a regional multiplier effect of about an additional eight hundred workers.

The national effect of these new firms, however, will be an employment increase considerably smaller than eight hundred. It is likely that most of additional 35 firms will have been attracted from other locations; output and employment in other regions will be falling and will be subject to a negative multiplier effect. It is, however, possible that the 92 total migrant firms will be larger than they would have been in the absence of a tax credit. As an upper bound, the study assumes that these firms produce 23.1 percent more output,[13] hire 23.1 percent more labor, and use 23.1 percent more capital than would otherwise have been the case. As in the case of the expanding Kansas firms, only about 6 percent of this extra output can be considered a contribution to net national production.

An unfortunate aspect of many types of tax credits is that they fail to distinguish between the firms that actually base their decisions on the tax policy and the firms that would have engaged in the desired behavior (investment) in any case. In the example of an investment tax credit, new rural firms receive an tax reduction regardless of whether their plans to locate in a rural area are actually influenced by the decision. All investing firms benefit equally. Thus the tax cost for the new firms is unnecessarily large. The budgetary effects of the tax credits for new firms are shown in Table 14.

Table 14
Budgetary Effects of a 20 Percent Investment Tax Credit for New Rural Firms: Estimates for Rural Kansas Counties (in millions of dollars)

Cost of Investment Credit (present value)	$ 80
Tax Collections Due to New Income (present value, cumulative for 10 years)	– $ 14
Net Tax Cost	$ 66

Cost of investment credit estimated by the present value of investment for 92 total new firms (base of 57 plus 35 additional firms) times 20 percent. Investment each year is $47.7 million from 92 firms times an expansion factor of 1.231. Discount rate of 10 percent is used for present value calculation.

Present value converts a stream of future dollars into a current year comparison. Present value calculations taken for first ten years.

The tax collections due to new income each year are estimated by (22.9 percent expansion of value added for the 92 firms ($14.8 million) × (percentage of output that is a net national increase (6 percent)) × (multiplier effect (2)) × (average tax rate on value added (25 percent)).

Value added for the 92 firms is found by taking the average return on capital times amount of capital ($46.3 million) plus the average wage times the amount of labor ($18.3 million).

Summary of the Effects of an Investment Tax Credit

Our analysis has shown that an investment tax credit would have a highly beneficial effect on eligible rural areas. For rural Kansas, direct manufacturing employment is estimated to rise by 11,040 from existing firms and eight thousand (over ten years) from additional new firms, assuming that all rural counties qualify for the tax benefit. Applying an employment multiplier of 2, the tax credits could result in as many as 38,080 jobs in rural areas. The cost of such a program is best reflected in the net federal tax cost per new job generated. Under the assumptions made in this report, the ten-year cost of the program is 133 million dollars or $3,489 per new employee. It should be noted that costs and benefits have been calculated in present value terms.

An investment tax credit would be an effective way of retaining and stimulating jobs in rural areas. Most of the jobs created, however, would be shifted from urban areas. Some urban firms would migrate to rural areas. Furthermore, some urban firms would go out of business as their customers transferred to the new and expanding rural firms. The net cost of the tax incentives would have to be borne by rural and urban taxpayers alike. Partially offsetting the costs of transferring jobs to rural areas are the benefits of preserving rural communities. If rural residents are forced to migrate in order to find jobs, urban areas will incur additional costs for schools, roads, and other public facilities. Meanwhile, existing structures in rural communities will be underutilized.

Appendix A
Kansas Manufacturing Statistics

Some basic data about production relationships in Kansas aid the examination

Table 15
Statistics for Kansas Manufacturing, 1985 (in millions of dollars)

Payroll	$ 4,219.8
Value Added	11,651.6
Cost of Materials	19,946.4
Value of Shipments	31,629.5
Gross Book Value of Capital	7,808.9
Machinery and Equipment	5,133.3
Buildings and Structures	$ 2,675.6

Total Kansas Manufacturing Employment: 184,400

Source: *Annual Survey of Manufactures*, 1985.

of a tax incentive. The *Annual Survey of Manufactures* for 1985 contains the most recent data on output, labor, capital, and value added for individual states. U.S. and Kansas statistics from the *Annual Survey* are reproduced in Table 15; some simple ratios are calculated in Tables 16 and 17. Notice that the tables contain two measures of capital, a book value measure and a measure adjusted for inflation and depreciation.

Appendix B
Calculation of User Cost of Capital

The calculations of user cost of capital (or simply "user cost") are based on a formula presented by Steven M. Fazzari.[14] User cost refers to the tax adjusted cost of capital per dollar of investment spending. This appendix describes the formula used and gives the value of variables in the formula.

Notation

k = investment tax credit rate.
t = capital investment revenue tax rate.
z = present value of depreciation deductions per dollar of investment.
i = nominal interest rate.
n = expected inflation rate.
d = depreciation rate.
L = proportion of investment finance by debt.

Procedure

$$\text{user cost} = \frac{(1-k-tz)}{(1-t)}\ [(i-n+d-tLi)]$$

Values of variables:

Under the new tax laws the corporate tax rate is 34 percent. So, t = 0.34.

The nominal interest rate (i) is assumed to be 10 percent. The expected inflation rate (n) is assumed to be 4 percent. So, i = 0.10 and n = 0.04.

Fazzari assumes the proportion of investment financed by debt is 30.6 percent, based on estimates which he made using the Washington University Macro Model. So, L = 0.306.

Under the assumptions of a corporate tax rate of 34 percent and an interest rate of 10 percent, Fazzari calculates the present value of depreciation allowances (tz) for equipment and for business structures. For equipment tz = 0.877, for business structures tz = 0.431.

The depreciation rate (d) was calculated based on data presented by Charles R. Hulten and Frank C. Wykoff.[15] They estimated depreciation rates for structures of 3.7 percent and for equipment of 13.3 percent. Commerce Department data for investment for Kansas in 1985 show that 34 percent of investment spending went toward structures and 66 percent went toward equipment. Using these figures a weighted average was calculated yielding an overall depreciation rate for Kansas of 10 percent. So, d = 0.10.

Appendix C
Responses of Existing Firms to the Investment Tax Credit

This appendix assumes that production can be described by what is known as Cobb-Douglas technology.[16] As a direct consequence of this technological assumption, there is a simple relationship between the percentage changes in labor, capital, and the user cost of capital.

Table 16
Ratios for Kansas Manufacturing, 1985

Economic Value of Capital/Labor	41,500.50
Economic Value of Capital/Output	2.44
Labor Cost/Output	0.13
Material Cost/Output	0.63
Capital Returns/Output	0.24

Economic Value of Capital: $7,652,700,000

Economic Value of Capital: This adjusts the gross book value measures of capital for inflation and depreciation. A conversion factor of 0.98 was found by comparing national measures of book value and economic value for 1985.

Sources: *Annual Survey of Manufactures*, 1985; *Survey of Current Business*, August 1986.

Table 17
Rural and Urban Employees and Payroll for Manufacturing, 1985

	Employment (in thousands)	Payroll (in millions)
Total Kansas	185.7	$4,247.7
Kansas Urban	114.8	2,933.4
Kansas Rural	70.9	1,314.3

Urban/Total Employment: 61.8%
Rural/Total Employment: 38.2%

Source: *County Business Patterns*, 1985.

Equation 1

$$\frac{\text{percent change in capital} - \text{percent change in labor}}{\text{percent reduction in user cost}}$$

The problem with this formulation is that it shows only the differences of changes in capital and changes in labor, not the exact magnitude of each change. Nevertheless, this formula is an important start on the calculation of the impact of the tax credit. Using the calculations for user cost from Appendix B, an original capital stock estimate for rural areas of $2,923 million,[17] and an original employment estimate of 70.9 thousand, the reduction in user cost will be 31.1 percent.

Table 18 shows that the capital/labor ratios for expanding manufacturers are much larger than those for new firms. A possible explanation for this is that expanding firms are adjusting their capital/labor ratios at the same time as they are expanding output. New firms, on the other hand, start out with their ideal capital/labor ratios. In comparison to the capital/labor ratio for expanding firms, the capital/labor ratio for new firms is much closer to the Kansas average of $41,500. Overall, Kansas firms appear to add labor and capital simultaneously.

The relationship between labor and capital changes can be made more precise by returning to Equation 1. For the period 1982 to 1984, capital grew by 23.9 percent and labor grew by 8.0 percent. To be consistent with economic theory, a 15.9 percent fall in the user cost of capital is implied.

A further consequence of the assumption of Cobb-Douglas technology allows the calculation of the output change that results from the change in labor and capital:

Equation 2

(capital share) (% change capital) + (1 − capital share) (% change labor) = % change output

The capital share is the ratio of returns on capital to output. Appendix A estimates this to be .24. The new and expanding firms are estimated to have contributed an 11.8 percent growth in output for the period 1982 to 1984. We can now estimate a relationship between the percentage change in user cost and the resulting percentage change in output:

Equation 3

$$\text{percent change output} = \frac{11.8}{-15.9} \times \% \text{ change user cost} =$$

$$-.742 \times \% \text{ change user cost}$$

Table 18
New and Expanding Kansas Manufacturing Firms, 1982-1984

	Capital Expenditures ($ mil.)	New Laborers	Marginal Capital ÷ Labor
New Firms	259.4	8,060	32,184
Expanding Firms	698.4	5,652	123,566

Source: *New and Expanding Manufacturers*, 1985. All numbers have been adjusted for inflation using price indexes for fixed investment from *Business Statistics*, 1984. Marginal capital/labor ratios show additional capital divided by additional labor.

Equations 1, 2, and 3 can be used to estimate the impact of the investment tax credit. The credit lowers the user cost of capital by 31.1 percent. This in turn increases output by 23.1 percent or $2,790 million using $12,080 million as an estimate of 1985 rural output. Firms increase their work forces by 15.6 percent, or 11,040 workers, and they increase their capital by 46.7 percent or $1,365 million.

A Caution About Cobb-Douglas Assumptions

Cobb-Douglas technology carries with it the assumption that the capital stock is highly responsive to changes in the user cost of capital. Some researchers argue that capital is actually less responsive to the user cost than Cobb-Douglas technology would indicate. If these researchers are correct, the estimates for the change in capital, labor, and output will all be lower. The estimates presented should be considered as upper limits to the impact of the policy.

Notes

[1] U.S., Department of the Treasury, *The Operation and Effect of the Possessions Corporation System of Taxation*, Fifth Report (Washington, DC: U.S. Government Printing Office, 1985).

[2] The term "tax expenditure" means that a tax deduction or credit causes the Treasury to forego potential tax revenue.

[3] Robert A. McLean, "Kansas Economic Development in the Decade Ahead: A Method and Application," *Kansas Business Review*, 8 (Fall 1984):1-7.

[4] U.S., Department of Commerce, Bureau of the Census, *County Business Patterns*, 1982 and 1985.

[5] Karl Seidman, *The Role of Taxation in State Business Climate* (Washington, DC: The Corporation for Enterprise Development, 1987); Michael Kieschnick, *Taxes and Growth: Business Incentives and Economic Development* (Washington, DC: Council of State Planning Agencies, 1987).

[6] Timothy J. Bartik, "Business Location Decisions in the United States: Estimates of the Effect of Unionization, Taxes, and other Characteristics of State," *Journal of Business and Economic Statistics* 3 (January 1985):14-22.

[7] Kansas Department of Economic Development, *New and Expanding Manufacturers*, 1985, 1986.

[8] See for example Benjamin M. Hawkins, "The Impact of the Enterprise Zone on Urban Areas," *Growth and Change*, January 1984, pp. 35-40.

[9] See Mark Henry, Mark Drabenstott, and Lynn Gibson, "A Changing Rural America," *Economic Review*, Federal Reserve Bank of Kansas City, 71 (July/August 1986):23-41.

[10] Mark Drabenstott, Mark Henry, and Lynn Gibson, "The Rural Economic Policy Choice," *Economic Review*, Federal Reserve Bank of Kansas City, 72 (January 1987):41-58.

[11] Daniel Otto, *Analysis of Farmers Leaving Agriculture for Financial Reasons: Summary of Survey Results from 1984* (Ames, IA: Iowa State University, 1985).

[12] Bartik, "Business Location Decisions," 1985.

[13] See Appendix C.

[14] Steven M. Fazzari, "Tax Reform and Investment: How Big an Impact?" *Review*, Federal Reserve Bank of St. Louis, January 1987, pp. 15-27.

[15] Charles R. Hulten and Frank C. Wykoff, "The Measurement of Economic Depreciation," pp. 81-125 in C.R. Hulton, ed., *Depreciation, Inflation, and the Taxation of Income from Capital*, (Washington, DC: The Urban Institute Press, 1981).

[16] Fazzari, "Tax Reform and Investment," 1987.

[17] Since no regional capital stock numbers are available, the total Kansas capital stock has been prorated by the ratio of rural to total employment. Unfortunately, this ignores possible differences in rural versus urban capital/labor ratios.

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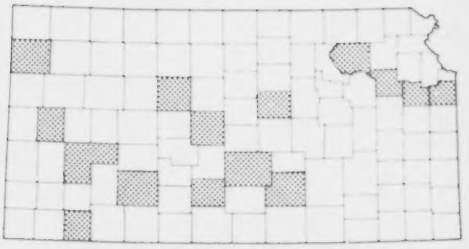
Kansas's County Pull-Factor Analysis: 1982-1987



James Vassar
David L. Darling

James Vassar was an extension assistant at the Cooperative Extension Service at Kansas State University, and he was working on an input-output model for the Dodge City region. Dr. David Darling is an assistant professor in the Department of Agricultural Economics at Kansas State University. He is working in the Cooperative Extension Service as a specialist in community economic development.

Introduction

Consumption patterns and trends indicate changes in economic prosperity. People spend according to their present income, expected future income, and net worth. Thus, people will adjust their consumption patterns if present income changes, if future income is expected to change, and if their net worth changes or is expected to change.[1]

As a measure of consumption patterns in Kansas communities, we have developed the pull-factor analysis. Based on retail sales tax data,[2] the pull factor is a very current measure of economic prosperity: collections are reported monthly, and the data are available within two months of receipts.

Methodology

Pull factors measure consumer patterns and economic trends.[3] To compute pull factors, the county level annual sales tax collections are divided by each county's estimated population for that same year, providing a per capita sales tax collection rate for each of the 105 counties of Kansas.

The pull-factor value for each county is the county per capita amount divided by the state sales per capita, which is the sum of all annual county sales tax collections divided by the same year's estimated state population.

Figure 1 shows recent pull-factors for each county. The population estimates are from the *Kansas Governmental Journals* for the years 1982 to 1987.[4] The sales tax collection data are from the *Kansas Department of Revenue—Sales Tax Collection by County Classification* monthly reports for 1982 to 1987.[5]

The pull factor is a relative measure of how well the businesses are doing in a county. Over time this measure shows the changes in strength of that county's business community compared with the state's business community. Figure 2 shows how pull factors have changed over the past five years. We can assume that where pull factors are stable over time the total economy of the county is as stable as the state. In counties where pull factors are increasing in value we can assume that the county's economy is expanding faster than the state's rate. Finally, in counties where pull-factors are decreasing in value we can assume that the county's economy is declining compared with the state.[6]

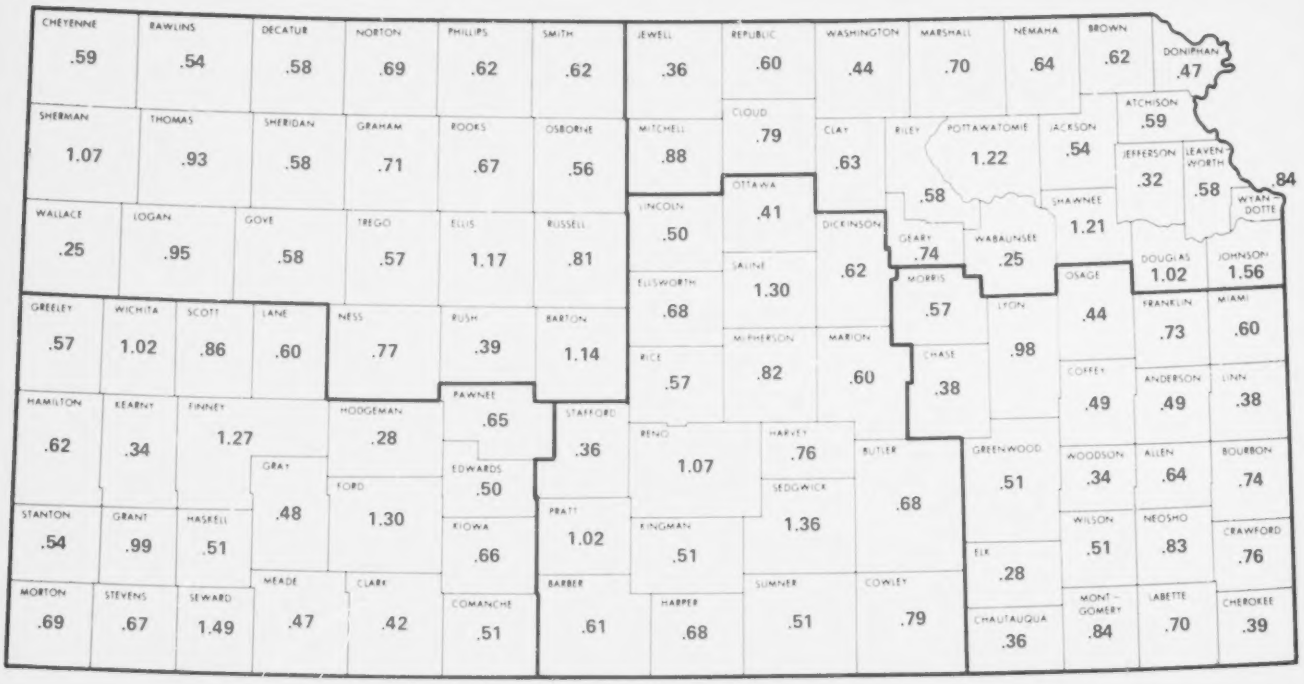
The pull factor also shows which counties are trade centers. A county such as Ford has a pull factor of over one. Thus, Ford County has a higher per capita sales tax collection rate than the Kansas per capita rate. A pull factor greater than one usually indicates that businesses in a county are able to capture business from households living in other counties. In Figure 1 Ford County is shown having a higher pull factor than other counties nearby. Thus, Ford County, which includes Dodge City, is a regional trade center.[7] Also, other nearby counties are losing as much as 70 percent of their potential trade.[8]

The county pull-factor map shown in Figure 1 illustrates an important economic fact. Not all business communities have equal pulling power. The smallest business communities or shopping places are dominated by larger ones. In fact, one can find a pattern of small, medium, large, and metro trade centers that all fit together like the solar system. The smallest ones are dominated by medium-sized trade centers, which in turn are dominated by large ones. Even trade centers like Salina lose trade to the metropolitan communities of Wichita and Kansas City. Thus, it is logical that small centers will have pull factors that are less than one, and large centers will have pull factors that are greater than one.

Obviously, no one measure is a perfect one of the business and economic climate of a county. One problem with the pull factor is that it is based on retail sales tax collections, but some retail sales are not taxed. In agricultural centers like Hodgeman County, where tax-free sales of new and used farm machinery, agricultural feed, seed, and chemicals contri-

In counties where pull factors are increasing in value we can assume that the county's economy is expanding faster than the state's rate.

Figure 1
County Pull Factors: July 1986 through March 1987



pull factor = per capita county sales tax collection / per capita state sales tax collection

Source: Kansas Department of Revenue.

bute an important part of the county's total business activity, pull factors will be biased downward.

Interpretation of Results by Region

In the northeast the relative strength of the Kansas City metropolitan area, including Johnson and Wyandotte counties, increased. Pottawatomie's pull factor increased dramatically, and Johnson and Douglas counties' also increased substantially. Mitchell, Cloud, and Geary counties experienced a declining pull factor from 1982-1987.

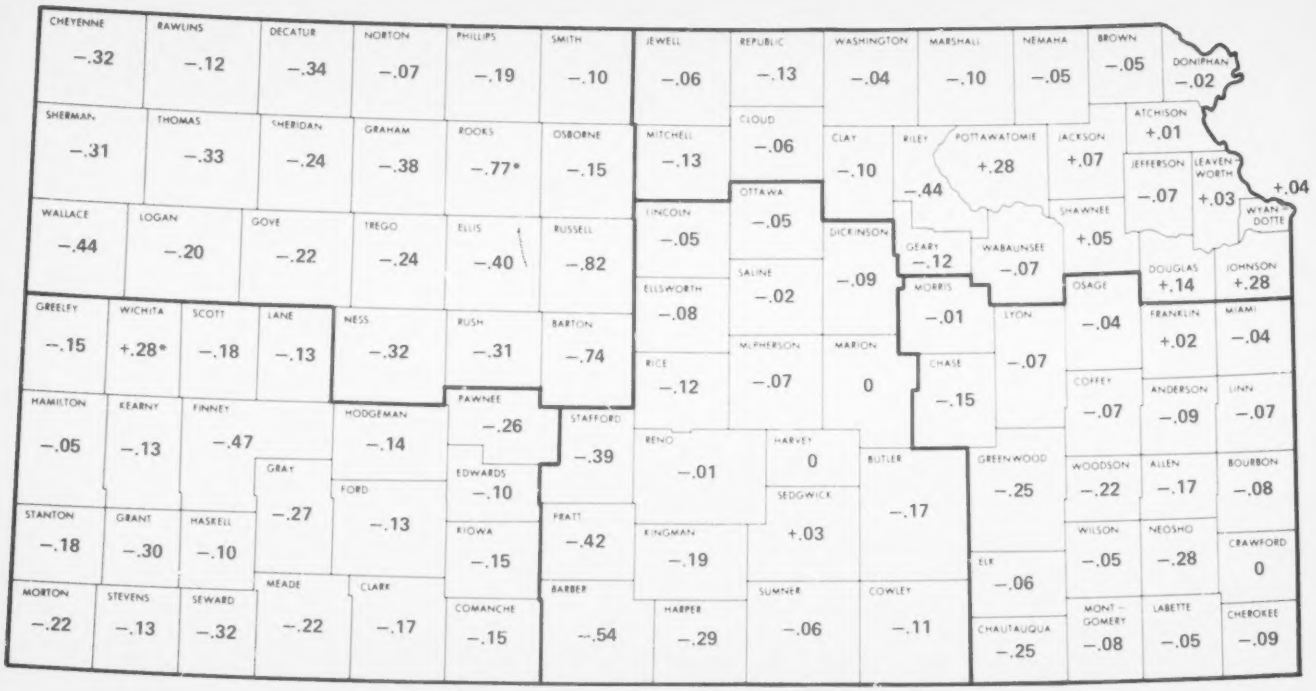
The economic strength of northwest Kansas has diminished since 1982. Counties in this region have experienced the greatest decline compared with other Kansas regions. The pull factors of the counties in this region dropped as much as 0.8 points between 1982 and 1987. Russell (from 1.63 to 0.82), Barton (from 1.88 to 1.14), and Ellis (from 1.25 to 1.17) were the hardest hit by this decline. Logan County became the most stable, but it too experienced economic decline by 0.2 points.

In the southeast area, no single county became a dominate trade area. In 1982 Neosho County showed the greatest strength in the southeast. Since 1982, Neosho has lost its position as the strongest regional county. A majority of the counties in the southeast show a tendency toward stability, but nearly all have experienced declines. Crawford County was not affected by this general decline. In fact, it became one of the most stable counties in the state of Kansas. In the five-year period it had an average pull-factor of 0.78, or an annual loss averaging about 22 percent in business trade to outside businesses. Other counties showing high stability included Franklin, Bourbon, Labette, and Morris. As Figure 1 shows, the weakest counties of the southeast area were among the weakest counties in the entire state. These counties include Elk, Chautauqua, Linn, Osage, and Woodson. The weakest counties in southeast Kansas appear to be getting weaker.

The strongest counties in south central Kansas were very stable, while the weakest were not stable and were not holding their own economically. Saline and Sedgwick counties were very stable and remained the strongest counties in the region, holding a pull factor of 1.2 or better. The second strongest counties in this area include Reno (pf = 1.07), McPherson (pf = 0.82), and Pratt (pf = 1.02). The weakest counties included Lincoln, Ottawa, Stafford, Rice, King-

In the southeast area, no single county became a dominate trade area.

Figure 2
County Business Pull-Factor Change From 1982 to 1987



Source: Based on sales tax collections data, Kansas Department of Revenue, and Kansas State University Cooperative Extension Service.

* Changes for Wichita and Rooks counties are from 1983 to 1987 because of the questionable reliability of 1982 data.

man, and Sumner. Lincoln was the most stable of the weak counties.

The southwest area possessed the most variety of economic activity in the state, with pull-factors ranging from 1.49 to 0.28. The four counties with the highest pull factors were Finney, Wichita, Seward, and Ford. Ford was the most stable of the four, although all four have experienced economic decline. The weakest regional counties are Kearney and Hodgeman, which had pull-factors of 0.34 and 0.28 respectively. Over the five-year period, Wichita, Hamilton, Finney, Stanton, and Seward experienced some very erratic economic activity with their pull-factors jumping up or down as much as 0.25 points from one year to the next. Greeley, Stanton, and Stevens experienced a steady increase between 1982 and 1984 and then a two-year rapid decline. Wichita had the greatest economic improvement over the five-year period: Its pull-factor jumped from 0.75 to 1.0. Overall, the southwest area encountered much decline in trade from 1984 to 1987.

In the 1982-1983 period there were 23 counties registering a pull-factor of 1.0 or greater, 18 of them located west of Interstate Highway 81. Also, there were 13 counties with a pull-factor of 0.49 or less. Only three of these weak counties, Jewell, Hodgeman, and Kearney, were located west of Highway 81. In the latest pull-factor analysis of July 1986 to March 1987, 15 counties held a pull-factor of 1.0 or greater, nine of them located west of Highway 81. Consequently, a net of eight counties dropped below the 1.0 pull-factor level from 1982 to 1987. At the same time a net of 12 counties dropped below the 0.50 pull-factor level. Therefore, in the 1986-1987 period a total of 25 counties declined to a pull-factor of 0.49 or less. Eleven of these counties are west of Highway 81.

Summary

The largest population centers in metropolitan areas did not decline in terms of retail sales. However, Sedgwick County did not keep pace with Johnson County.

Per capita retail sales in the trade centers in western Kansas declined dramatically in relation to the rest of the state between 1982 and 1987. They had had

Per capita retail sales in the trade centers in western Kansas declined dramatically in relation to the rest of the state between 1982 and 1987.

the highest pull-factors in Kansas in 1982. Western Kansas lost retail drawing power at a rate faster than eastern Kansas. Also, southeastern Kansas lost strength at a rate faster than the rest of eastern Kansas.

Almost all counties with a low pull factor in 1982 had an even lower one by 1987. The exceptions are in the area from Kansas City to Topeka.

In western Kansas, pull factors in trade center counties such as Seward declined an amount equal to or greater than the surrounding counties. The exception to this is Russell County, which declined by 0.82. This decline was the greatest one in the state.

Notes

[1] Paul A. Samuelson, *Economics*, 6th ed. (New York: McGraw-Hill, 1964). See Discussion of Franco Modigliani's Theory of Lifetime Saving and the Wealth Income Ratio, pp. 749-750.

[2] The following items are not subject to sales tax in Kansas: used farm machinery and equipment, replacement parts and services, feed, seeds, and chemicals for agricultural use, electricity, heating and motor fuel, water and phone service for home use and farm use, prescription drugs, prosthetic devices and insulin.

[3] Ron Hustedde, Ron Shaffer, and Glen Pulver, *Community Economic Analysis: A How-To Manual*, North Central Regional Center for Rural Development, University of Wisconsin-Madison and Iowa State University of Science and Technology, November 1984, p. 2.

[4] *Kansas Government Journal*, Kansas League of Municipalities, 1982-1987, January editions.

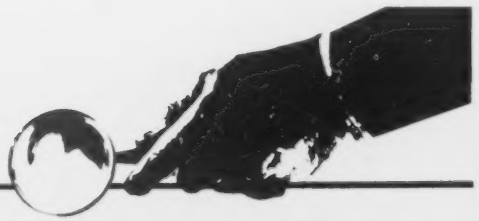
[5] *Sales Tax Collection by County Classification*, Kansas Department of Revenue, July 1982 to March 1987. (Monthly reports.)

[6] Hustedde, *Community Economic Analysis*, pp. 30-35, 59.

[7] Robert A. Chase and Glen C. Pulver, *The Impact of Shopping Centers on the Downtowns of Rural Communities*, Res. Bul. R3148, College of Agriculture and Life Sciences, University of Wisconsin-Madison, December 1981; and David L. Huff, "Defining and Estimating a Trade Area," *Journal of Marketing*, Vol. 28 (July 1964):34-38.

[8] John A. Dawson, ed., *Retail Geography* (New York: John Wiley, 1980); Benjamin Goldstein and Ross Davis, eds., *Neighborhoods in Urban Economy: Dynamics of Decline and Revitalization* (Lexington, MA: Lexington Books, 1977); and Kenneth E. Stone and James C. McConnon, "Analyzing Retail Trade Potential for Counties and Towns," Iowa State University Department of Economics, 1983. (Unpublished paper).

Economic Conditions



The manufacturing sector is OK. Granted "OK" is a rather prosaic description. It does not catch one's attention as the headlines have: "Is Manufacturing Dead?" or "The Smokestacks Won't Tumble," or "Manufacturing Renaissance." "Manufacturing Industries: Hopeful Mix" would ring more true to the facts without the glitter or hype.

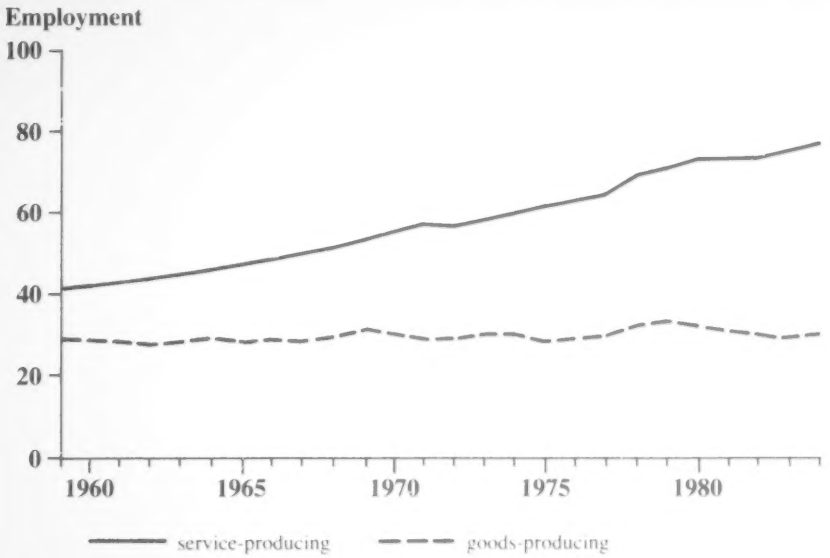
Manufacturing, along with the other goods-producing sectors, agriculture, mining, and construction, certainly has been replaced in its share of both actual output and employment. Service industries are taking a larger and larger share of the economy. As can be seen in Table 1, the percentage of gross product in both the United States and Kansas produced by agriculture, construction, manufacturing, transportation, and wholesale and retail trade declined during the seven years between 1977 and 1984. Finance, insur-

Table 1
Gross Product by Sector

Sector	US % of GNP 1977	US % of GNP 1984	KS % of GSP 1977	KS % of GSP 1984
Agriculture	3.0	2.5	7.1	5.7
Mining	2.7	3.2	3.1	4.3
Construction	4.5	4.0	5.2	4.1
Manufacturing	24.2	21.2	20.7	17.9
Transportation	3.8	3.5	5.1	5.0
Communication	2.6	2.8	2.2	2.7
Electric,gas,sanitation	2.5	3.0	2.9	3.8
Wholesale and retail trade	17.5	16.4	19.1	15.9
FIRE	14.0	16.3	12.9	14.5
Services	12.5	14.4	8.0	13.5
Government	12.6	11.5	13.0	11.7

Sources: *Development Perspective 1978-1979*, KDED. *Survey of Current Business*, April 1985. *Kansas Statistical Abstract, 1985-1986.*

Figure 1
Total Employment, 1959-1984
(in millions)



Source: Bureau of Labor Statistics, "Deindustrialization and the Shift to Services," *Monthly Labor Review*, June 1986.

ance, and real estate (FIRE) and the service sector have increased their share of gross product. In general, the perception has been that the U.S. and Kansas economies have become more service oriented and that the goods-producing sectors were in a decline.

However, a shift in the share of employment and output that manufacturing holds in the economy does not sound the death knell for that sector. Its importance or relative ranking is changing, but the sector may still be growing. Figure 1 shows that actual employment in the goods-producing sector has remained fairly steady from 1959 to 1984 in the United States, while employment in the service-producing sectors has been on the rise. So the actual employment in these sectors has been steady, and in the case of manufacturing it has actually been increasing slightly. A declining share in total employment really only means that the fraction of the pie is smaller, but the slice may actually be larger if the pie is increasing. Table 2 shows how sectors that are losing ground as a percent of GNP may still show a substantial growth in employment. Total employment in Kansas increased 16.3 percent; so although the proportion of employment represented by manufacturing may have decreased, actual employment increased by 6.8 percent.

While it may be perceived that the U.S. economy is deindustrializing and shifting to services

> . . . the shift has largely been a relative one. Employment in the manufacturing sector in absolute terms has not declined appreciably over the last two decades. Manufacturing production in real terms has bounced back from the recession and by 1984 had reached a new peak level, hardly proof of a loss of our industrial base.[1]

Within the manufacturing sector there have been shifts in the relative position of industrial groups. The statement that the manufacturing sector is healthy (or at least not as sick as is generally perceived) should not be viewed as a claim that every industry within the sector is doing well. To better understand what is happening within the sector, industries have been grouped as follows:

- Highly Innovative:
  printing and publishing
  rubber and miscellaneous plastic products
  fabricated metal products
  machinery, except electrical
  electric and electronic equipment
  instruments and related products

- Midrange Products:
  textile mill products
  apparel and other textile products
  lumber and wood products
  furniture and fixtures
  paper and allied products
  chemicals and allied products
  transportation equipment
  miscellaneous manufacturing industries

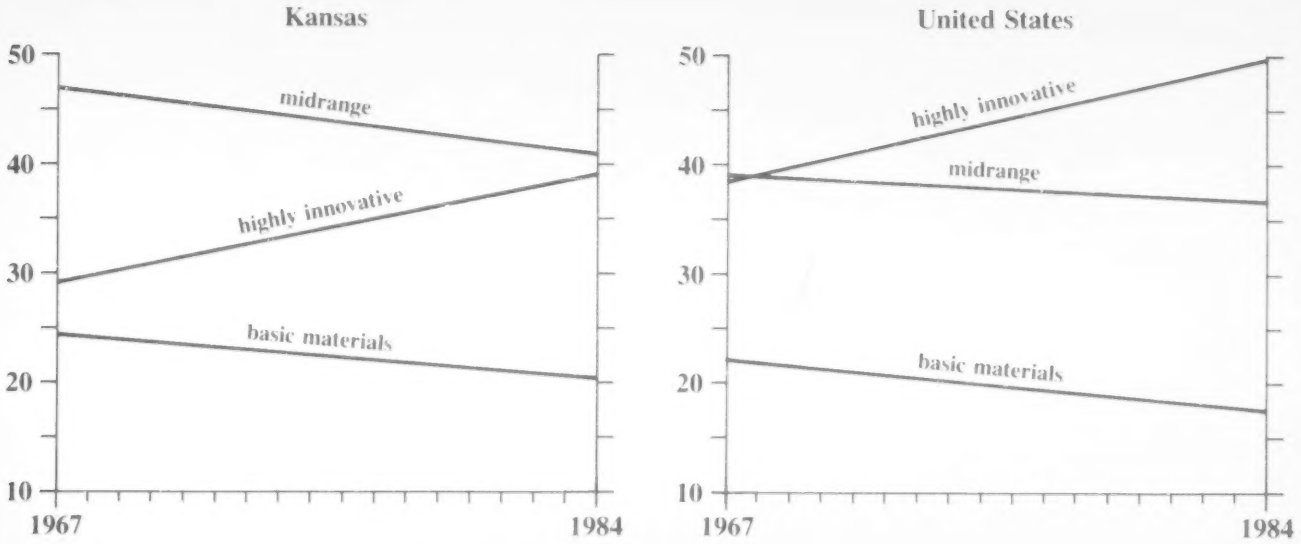
- Basic Materials:
  food and kindred products
  petroleum and coal products
  leather and leather products
  stone, clay, and glass products
  primary metal industries
  tobacco

These industries were categorized by their ability to generate jobs nationally from 1959 to 1983. Employment was used as the measure for innovation because innovative businesses, by improving existing products or creating new ones, spur demand. To meet increased demand they must hire new employees.[2]

Table 2
Percent Change in Kansas Employment by Sector 1977-1984

Total employment	+16.3%
Agriculture	+43.2
Mining	+53.4
Construction	−16.2
Manufacturing	+6.8
Transportation	+20.1
Wholesale Trade	+8.2
Retail Trade	+12.1
FIRE	+26.3
Services	+34.4

Figure 2
Mix of Manufacturing Employment



Source: Calculated from U.S. Department of Commerce, *County Business Patterns*.

From Figure 2 one can see that the mix of manufacturing employment has changed from 1967 to 1984. In both Kansas and the United States the highly innovative group indeed represents a growing share of manufacturing employment; in Kansas manufacturing made up 28.7 percent of total manufacturing employment in 1967 and 38.9 percent in 1984. The basic materials and the midrange groups both declined in their share, although in Kansas the midrange group dropped the most, and the basic materials group did not decline much. The U.S. proportion of basic materials manufacturing declined more than the Kansas share, while the midrange group remained slightly more stable.

Besides considering the percent of manufacturing employment these groups represent, let us also consider actual employment changes. In the United States, total employment in manufacturing from 1967 to 1984 declined by 5.7 percent, but in Kansas it increased by 27.2 percent, clearly indicating that Kansas was growing in its manufacturing sector over those years. Although manufacturing employment grew in the state, total Kansas employment during those years increased by 68.6 percent. From Table 3 it can be seen that between 1967 and 1984 employment in the highly innovative group increased in each industry in both the United States and Kansas except that in Kansas fabricated metal products declined. Employment in electric and electronic equipment and instruments increased tremendously in Kansas.

The remarkable thing about the midrange group is the growth of employment in the paper and paper products industry in Kansas. In both the United States and Kansas, the lumber and wood products industry increased dramatically, actually qualifying as an innovative industry using employment as the measure of innovation.

In the basic materials group, all industries in both the United States and Kansas shrank.

Using employment growth as the measure, the Kansas manufacturing firms that are designated highly innovative become

- instruments and related products
- electric and electronic equipment
- rubber and miscellaneous plastics products
- paper and paper products
- printing

It has been observed that many innovative firms are smaller than the more traditional firms. Possibly a better indication of what is happening in the manufacturing mix could be given by looking at the number of firms.

From Figure 3, the originally designated highly innovative group in both Kansas and the United States now comprises over 50 percent of the total number of manufacturing firms. In 1967 30.8 percent of the manufacturing firms in Kansas were basic materials, in 1984 only 20.9 percent were. The U.S. economy experienced a similar shift. The share represented by the midrange group did not change much in Kansas and changed only slightly more in the U.S. economy.

Looking at the actual growth rather than the share of the total, it is clear from Table 4 that the number of firms in the highly innovative industries also grew faster than the number of firms in the other two groups, with tremendous increases in rubber, electric and electronic equipment, and instruments. Overall, there was a 30.4 percent increase in manufacturing firms in Kansas and a 17.4 percent increase in firms in the United States.

For both the Kansas and the U.S. economies, manufacturing is not dead.

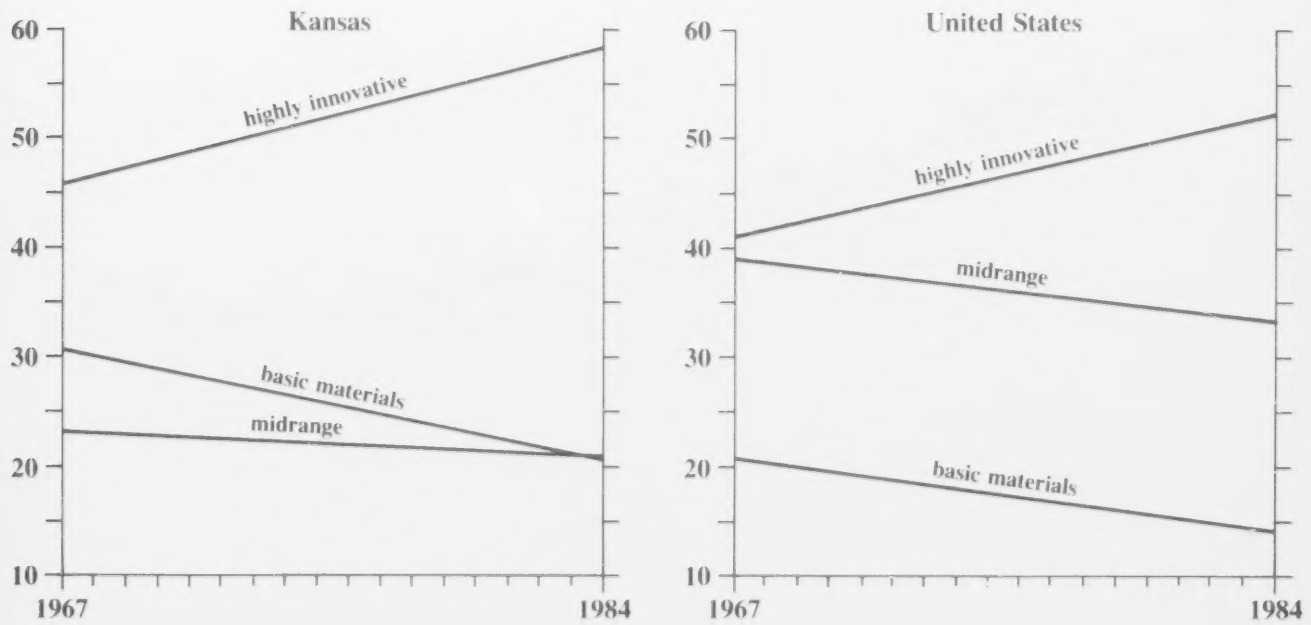
Table 3
Percent Change in Employment, 1967-1984

	Kansas	United States
Highly Innovative		
Printing	38.9%	31.8%
Rubber	64.3	47.0
Fabricated	−18.9	15.6
Machinery	18.0	6.6
Electric	15.2	7.6
Instruments	20.0	60.3
Mid-range		
Textile	n/a	−21.7
Apparel	−7.1	−14.3
Lumber	18.5	15.9
Furniture	−9.1	9.8
Paper	38.9	−3.8
Chemicals	−33.3	−1.8
Transportation	−18.7	−12.1
Miscellaneous	0.0	−7.4
Basic		
Food	−0.7	−10.4
Petroleum	−40.7	−9.2
Leather	n/a	−47.1
Stone	−28.0	−6.9
Primary	−26.0	−38.3
Tobacco		−23.8
Total	**+27.2%**	**−5.7%**

Source: Calculated from U.S. Department of Commerce, *County Business Patterns*.

The structure of manufacturing is changing. The share that various industries within the sector have is changing, and it appears that those industries classified as highly innovative are taking a larger share in both employment and number of firms in both Kansas and the United States. Further, the manufacturing sector is still generating new jobs. Although we read in the press of plant closings and declining employment in manufacturing firms, the fact is that total employment in the manufacturing sector has not declined much in the U.S. economy, and manufacturing employment has actually increased in the Kansas economy. Further, not all industries within the manufacturing sector are following the same trends. Within the sector Kansas in general has followed national trends. Most of the manufacturing industries designated "highly innovative" nationally are increasing employment in Kansas. We can expect to see a continual change in the mix of industries within the sector as some industries improve and grow and other industries restructure and trim down. In Kansas, the highly innovative industry

Figure 3
Mix of Manufacturing Firms



Source: Calculated from U.S. Department of Commerce, *County Business Patterns*.

Table 4
Percent Change in Number of Firms, 1967-1984

	Kansas	United States
Printing	37.0%	51.0%
Rubber	325.0	124.6
Fabricated	56.0	30.1
Machinery	59.0	41.2
Electric	224.0	62.8
Instruments	100.0	94.1
Textile	n/a	−11.8
Apparel	9.5	−10.6
Lumber	64.6	−1.8
Furniture	5.6	6.0
Paper	33.3	7.9
Chemicals	−7.7	0.1
Transportation	3.8	28.0
Miscellaneous	15.4	14.8
Food	−50.0	−33.2
Petroleum	6.5	26.0
Leather	60.0	−30.8
Stone	22.0	9.0
Primary	30.1	5.4

Kansas increase in manufacturing firms: 30.4%

U.S. increase in manufacturing firms: 17.4%

Source: Calculated from U.S. Department of Commerce, *County Business Patterns.*

group will likely continue to lead manufacturing development.

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Footnotes

[1] Ronald Kutscher, and Valerie Personick, "Reindustrialization and the Shift to Services." *Monthly Labor Review*, June 1986, p. 3.

[2] David Birch, "Is Manufacturing Dead?" *Inc.*, June 1987, p. 35-36.

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Economic Indicators

TABLE ONE: ECONOMIC INDICATORS

Comparison Indicators		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Quarterly, at annual rates, SA						
Kansas - Mil. $	1st	36232.0	36449.0	34485.0	-0.60	5.07
United States - Bil.$	2nd	3713.40	3662.03	3526.60	1.40	5.30
B. Employment - Quarterly						
Kansas - Thou., NSA	2nd	1208.53	1160.70	1179.20	4.12	2.49
United States - Mil., SA	2nd	112.17	111.27	109.27	0.81	2.65
C. Unemployment Rate - Quarterly						
Kansas - % NSA	2nd	4.5	5.9	5.3		
United States - % SA	2nd	6.2	6.7	7.1		
D. Retail Sales - Monthly, at annual rates						
Kansas - Mil. $, NSA	JUN	1525.00	1330.00	1440.00	14.66	5.90
United States - Bil. $, SA	JUN	126.60	124.90	119.60	1.36	5.85
E. Consumer Price Index, CPI-U, All items - Monthly, SA						
Kansas City* - 1967 = 100	DEC	324.70	323.70	321.80	0.31	0.90
United States - 1967 = 100	JUN	340.20	339.00	327.80	0.35	3.78
Kansas Indicators						
F. New Incorporations - Quarterly, NSA						
For Profit - Number	2nd	302.67	371.33	342.67	-18.49	-16.54
G. Tax Revenue, Quarterly, NSA						
General Fund Tax Revenue - Mil. $	2nd	128.00	142.17	148.60	-9.96	-13.86
H. Operating Expenditures, Quarterly, NSA						
General Fund Operating Expenditures - Mil. $	2nd	163.90	141.90	151.27	15.50	8.35

NOTES: *The Kansas City CPI-U is published biannually.
National employment and unemployment rate figures are based on the Current Population Survey (household survey).
State figures are based on the Current Employment Statistics Survey (establishment survey).
NSA-Not Seasonally Adjusted
SA-Seasonally Adjusted

SOURCE: BEA, BLS, Ks. Dept. of Human Resources, Ks. Secretary of State, Ks. Dept. of Administration, Ks. Dept. of Revenue.

TABLE TWO: NATIONAL INDICATORS
(Seasonally Adjusted)

General Indicators		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Income Measures - Quarterly, at annual rates						
Gross National Product - Bil. 82$	2nd	3793.7	3772.2	3704.7	0.57	2.40
Disposable Personal Income - Bil. 82$	2nd	2647.73	2674.60	2660.17	-1.00	-0.47
Personal Consumption - Bil. 82$	2nd	2489	2475.9	2434.3	0.53	2.25
Gross Private Investment - Bil. 82$	2nd	670.5	671.8	665.6	-0.19	0.74
Net Export of Goods and Services - Bil. 82$	2nd	-133.3	-135.2	-146.8		
Government Purchases - Bil. 82$	2nd	767.5	759.6	751.6	1.04	2.12
Savings Rate - %	2nd	3.30	3.87	5.27		
B. Labor Force - Monthly						
Civilian Labor Force - Mil.	JUN	119.50	120.00	118.00	-0.42	1.27
Employed - Mil.	JUN	112.30	112.40	109.60	-0.09	2.46
Unemployed - Mil.	JUN	7.30	7.50	8.40	-2.67	-13.10
Unemployment Rates - percent						
All -	JUN	6.10	6.30	7.10		
Women -	JUN	5.90	6.10	7.20		
Men -	JUN	6.10	6.30	7.10		
Teens -	JUN	15.90	17.70	18.90		
Blacks and other than white -	JUN	11.40	12.20	13.50		
Whites -	JUN	5.20	5.30	6.10		
C. General Business - Quarterly						
Industrial Production - 1977 = 100	2nd	128.17	127.00	124.37	0.92	3.06
Mfg. and Trade Sales - Bil. 82$	1st	333.33	332.37	415.50	0.29	-19.78
Mfg. and Trade Inventories - Bil. 82$	2nd	653.70	650.97	645.30	0.42	1.30
New Orders, Durable Goods - Bil. 82$	2nd	98.67	93.17	91.20	5.90	8.19
Capacity Utilization, Mfg. %	2nd	80.40	80.20	79.50		
New Housing Starts, Private - Tho.	2nd	1615.33	1794.67	1878.33	-9.99	-14.00
D. Prices - Monthly						
Consumer Prices - 1967 = 1009						
CPI-U, All Items	JUN	340.20	339.00	327.80	0.35	3.78
Food	JUN	334.40	332.00	317.40	0.72	5.36
Housing	JUN	370.10	368.90	360.10	0.33	2.78
Apparel	JUN	217.30	219.10	206.30	-0.82	5.33
Transportation	JUN	316.00	314.40	308.10	0.51	2.56
Medical	JUN	462.10	459.10	432.70	0.65	6.79
Producer Prices - 1967 = 100 (NSA)						
All Commodities	JUN	308.50	307.30	299.00	0.39	3.18
Industrial Commodities	JUN	320.20	318.60	311.80	0.50	2.69
Crude Materials	JUN	304.90	304.70	274.90	0.07	10.91
Capital Equipment	JUN	311.60	311.90	305.80	-0.10	1.90
Agricultural Prices - 1977 = 100						
Prices Received	JUN	131.00	129.00	121.00	1.55	8.26
Prices Paid	JUN	162.00	162.00	159.00	0.00	1.89
E. Monetary and Credit Aggregates - Quarterly						
(Annual rates of change, seasonally adjusted in percent.)						
Total Reserves -	2nd	8.00	16.40	18.70		
M1	2nd	6.40	13.10	15.50		
Commercial Banks:						
Savings -	2nd	24.10	37.30	13.40		
Small Denomination Time -	2nd	-4.60	-4.90	-2.50		
Large Denomination Time -	2nd	18.30	9.70	-3.50		
Thrift Institutions:						
Savings -	2nd	25.70	27.30	16.00		
Large Denomination Time -	2nd	-8.40	-9.50	11.20		
Debt Components:						
Federal -	2nd	9.50	9.70	11.60		
Nonfederal -	2nd	8.80	10.60	9.50		
Interest Rates - Monthly						
Prime Rate - %	JUN	8.25	8.14	8.50		
Discount Rate - %	JUN	5.50	5.50	6.50		

SOURCES: BEA, BLS, Survey of Current Business, Federal Reserve Bulletin.

TABLE THREE: EMPLOYMENT IN KANSAS

Category		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. General Indicators - Quarterly						
Civilian Labor Force - Tho.	2nd	1265.37	1233.80	1243.77	2.56	1.74
Employed - Tho.	2nd	1208.53	1160.70	1179.20	4.12	2.49
Farm Employment - Tho.	2nd	67.77	50.97	69.37	32.96	-2.31
Unemployed Tho.	2nd	56.83	73.10	64.67	-22.25	-12.11
Initial Claims for Unemployment Insurance - Tho.	2nd	12.29	19.07	13.37	-35.57	-8.07
Average Work Week, Mfg. - Hrs.	2nd	40.93	40.77	40.37	0.41	1.40
B. Industry Employment - Quarterly, in thousands						
All Industries -	2nd	998.83	979.93	994.00	1.93	0.49
Manufacturing -	2nd	178.77	174.53	176.27	2.43	1.42
Durable Goods -	2nd	105.70	103.20	104.90	2.42	0.76
Fabricated Metal Production -	2nd	11.50	11.10	11.70	3.60	-1.71
Machinery (incl. Elec.) -	2nd	27.83	26.93	26.43	3.34	5.30
Transport. Equip. -	2nd	47.60	46.63	45.17	2.07	5.39
Nondurable Goods -	2nd	73.07	71.33	71.37	2.43	2.38
Food and Kindred Prod. -	2nd	28.10	27.67	26.17	1.57	7.39
Meat Products -	2nd	14.37	14.17	12.80	1.41	12.24
Printing and Publishing -	2nd	18.47	18.30	18.20	0.91	1.47
Petroleum and Coal -	2nd	2.93	2.90	2.93	1.15	0.00
Mining -	2nd	11.70	11.43	12.40	2.33	-5.65
Oil and Gas Extraction -	2nd	10.27	10.03	10.73	2.33	-4.35
Contract Construction -	2nd	43.00	38.50	44.13	11.69	-2.57
Trans. and Public Utilities -	2nd	62.93	61.73	64.30	1.94	-2.13
Wholesale Trade -	2nd	65.97	65.20	66.77	1.18	-1.20
Retail Trade -	2nd	183.43	180.50	181.57	1.63	1.03
Finance, Ins., and Real Estate -	2nd	55.60	54.53	54.53	1.96	1.96
Services	2nd	198.70	195.17	194.53	1.81	2.14
Federal Government -	2nd	27.90	27.80	28.30	0.36	-1.41
State and Local Government -	2nd	170.80	170.53	171.20	0.16	-0.23

SOURCES: BLS, Ks. Dept. of Human Resources.

TABLE FOUR: KANSAS RETAIL SALES SUBJECT TO SALES TAX

Account		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Business Classification - Quarterly, in Millions						
Apparel -	2nd	50.62	58.02	36.38	-12.76	39.13
Automotive -	2nd	360.10	291.54	270.41	23.52	33.17
Food -	2nd	468.86	438.64	343.16	6.89	36.63
Furniture -	2nd	93.64	101.58	68.51	-7.82	36.68
General Merchandise -	2nd	306.12	318.82	231.24	-3.98	32.38
Lumber and Building Materials -	2nd	146.52	124.10	106.91	18.06	37.05
Prof. and Pers. Service -	2nd	104.76	97.36	77.52	7.61	35.14
Public Utilities -	2nd	85.18	105.79	63.85	-19.48	33.41
Unclassified -	2nd	177.52	167.92	126.39	5.72	40.45
Farm and Garden Products -	2nd	1.74	1.93	1.41	-9.91	23.96
Manufacturing and Trading -	2nd	111.30	99.72	86.02	11.61	29.39
Miscellaneous -	2nd	9.67	5.49	9.24	76.04	4.64
Total -	2nd	1832.83	1809.97	1421.04	1.26	28.98

NOTE: Retail sales figures are based on sales tax collections. Actual and reported retail sales may vary.

SOURCES: Ks. Dept. of Revenue.

TABLE FIVE: INCOME IN KANSAS
(Seasonally Adjusted, at Annual Rates)

Account		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Quarterly						
Total - Mil. $	1st	36232	36449	34485	-0.60	5.07
Nonfarm Income - Mil. $	1st	34654	34316	33619	0.98	3.08
Farm Income - Mil. $	1st	1578	2134	866	-26.05	82.22
Average Weekly Earnings, Mfg.* - $	2nd	406.59	409.86	388.47	-0.80	4.67
B. Earnings by Industry - Quarterly, in Millions						
Nonfarm -	1st	24558	24224	23212	1.38	5.80
Farm -	1st	1578	2134	866	-26.05	82.22
Manufacturing -	1st	5162	5063	4714	1.96	9.50
Durable Goods -	1st	3301	3288	2955	0.40	11.71
Nondurable Goods -	1st	1861	1775	1759	4.85	5.80
Mining -	1st	317	304	427	4.28	-25.76
Contract Construction -	1st	1752	1738	1509	0.81	16.10
Trans. and Public Utilities -	1st	2207	2203	2135	0.18	3.37
Wholesale Trade -	1st	1752	1749	1745	0.17	0.40
Retail Trade -	1st	2410	2378	2358	1.35	2.21
Finance, Ins., and Real Estate -	1st	1561	1516	1369	2.31	13.29
Services -	1st	4934	4846	4631	1.82	6.54
Federal Government -	1st	741	722	713	2.63	3.93
State and Local Government -	1st	2998	2987	2881	0.37	4.06

NOTE: *Not seasonally adjusted.

SOURCES: BEA, Ks. Dept. of Human Resources.

TABLE SIX: KANSAS AGRICULTURAL INDICATORS

Item		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Prices Received - Monthly						
All Farm Products - 1977 = 100	JUN	149	150	134	-0.67	11.19
All Crops - 1977 = 100	JUN	102	107	110	-4.67	-7.27
Wheat - $/Bu.	JUN	2.30	2.55	2.19	-9.80	5.02
Sorghum Grain - $/Cwt.	JUN	2.81	2.70	3.79	4.07	-25.86
Corn - $/Bu.	JUN	1.83	1.80	2.56	1.67	-28.52
Soybeans - $/Bu.	JUN	5.33	5.26	5.13	1.33	3.90
All Hay - $/Ton	JUN	52.00	49.00	42.00	6.12	23.81
Livestock and Products - 1977 = 100	JUN	179	177	148	1.13	20.95
All Beef Cattle - $/Cwt.	JUN	66.20	65.80	53.40	0.61	23.97
Steers and Heifers - $/Cwt.	JUN	67.40	67.30	54.00	0.15	24.81
Calves - $/Cwt.	JUN	77.00	77.40	57.90	-0.52	32.99
Hogs - $/Cwt.	JUN	55.40	52.60	52.90	5.32	4.73
Milk - $/Cwt.	JUN	12.20	12.20	12.20	0.00	0.00

SOURCE: Ks. Crop and Livestock Reporting Service.

NOTE: *Not seasonally adjusted.

SOURCES: BEA, Ks. Dept. of Human Resources.

TABLE SEVEN: EMPLOYMENT AND SALES FOR SMSAs AND COUNTIES

Area		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Wichita SMSA - Quarterly						
Civilian Labor Force - Tho	2nd	233.67	227.43	226.37	2.74	3.22
Employed - Tho	2nd	222.77	213.20	213.43	4.49	4.37
Unemployed - Tho	2nd	10.90	14.20	12.93	-23.24	-15.72
Rate - %	2nd	4.67	6.27	5.70		
Retail Sales - Mil. $	2nd	242.79	265.77	264.03	-8.65	-8.05
B. Kansas Portion of Kansas City SMSA - Quarterly						
Civilian Labor Force - Tho	2nd	304.07	301.53	298.40	0.84	1.90
Employed - Tho	2nd	290.87	286.33	287.00	1.58	1.35
Unemployed - Tho	2nd	13.20	15.23	11.43	-13.35	15.45
Rate - %	2nd	4.33	5.07	3.80		
Retail Sales - Mil. $	2nd	290.06	323.05	299.15	-10.21	-3.04
C. Topeka SMSA - Quarterly						
Civilian Labor Force - Tho	2nd	89.27	88.67	86.57	0.68	3.12
Employed - Tho	2nd	85.67	83.93	82.43	2.07	3.92
Unemployed - Tho	2nd	3.57	4.73	4.33	-24.65	-17.69
Rate - %	2nd	4.00	5.33	4.77		
Retail Sales - Mil. $	2nd	89.62	95.39	95.28	-6.05	-5.94
D. Lawrence SMSA - Quarterly						
Civilian Labor Force - Tho	2nd	38.80	38.63	37.30	0.43	4.02
Employed - Tho	2nd	37.47	37.00	35.90	1.26	4.36
Unemployed - Tho	2nd	1.33	1.63	1.40	-18.37	-4.76
Rate - %	2nd	3.47	4.23	3.80		
Retail Sales - Mil. $	2nd	27.54	34.75	31.55	-20.74	-12.70
E. Riley County--Manhattan Area - Quarterly						
Civilian Labor Force - Tho	2nd	27.57	27.13	27.20	1.60	1.35
Employed - Tho	2nd	26.70	26.10	26.37	2.30	1.26
Unemployed - Tho	2nd	0.87	1.07	0.80	-18.75	8.33
Rate - %	2nd	3.17	3.90	3.00		
Retail Sales - Mil. $	2nd	15.36	17.28	17.27	-11.13	-11.11
F. Reno County--Hutchinson Area - Quarterly						
Civilian Labor Force - Tho	2nd	32.03	31.60	32.60	1.37	-1.74
Employed - Tho	2nd	30.13	29.23	29.80	3.08	1.12
Unemployed - Tho	2nd	1.93	2.40	2.80	-19.44	-30.95
Rate - %	2nd	6.00	7.63	8.63		
Retail Sales - Mil. $	2nd	28.55	32.05	35.38	-10.92	-19.30
G. Crawford County--Pittsburg Area - Quarterly						
Civilian Labor Force - Tho	2nd	17.17	16.87	16.90	1.78	1.58
Employed - Tho	2nd	16.27	15.63	15.83	4.05	2.74
Unemployed - Tho	2nd	0.93	1.23	1.07	-24.32	-12.50
Rate - %	2nd	5.37	7.23	6.40		
Retail Sales - Mil. $	2nd	12.97	13.97	14.15	-7.19	-8.35
H. Lyon County--Emporia Area - Quarterly						
Civilian Labor Force - Tho	2nd	19.13	19.07	19.17	0.35	-0.17
Employed - Tho	2nd	18.40	18.03	18.03	2.03	2.03
Unemployed - Tho	2nd	0.73	1.00	1.10	-26.67	-33.33
Rate - %	2nd	3.83	5.43	5.90		
Retail Sales - Mil. $	2nd	14.71	16.74	16.50	-12.11	-10.84
I. Saline County--Salina Area - Quarterly						
Civilian Labor Force - Tho	2nd	27.33	26.53	25.83	3.02	5.81
Employed - Tho	2nd	25.83	24.80	24.30	4.17	6.31
Unemployed - Tho	2nd	1.53	1.73	1.53	-11.54	0.00
Rate - %	2nd	5.57	6.53	5.90		
Retail Sales - Mil. $	2nd	28.54	27.62	30.72	3.34	-7.09
J. Barton County--Great Bend Area - Quarterly						
Civilian Labor Force - Tho	2nd	16.23	15.97	17.33	1.67	-6.35
Employed - Tho	2nd	15.03	14.47	15.60	3.92	-3.63
Unemployed - Tho	2nd	1.20	1.50	1.73	-20.00	-30.77
Rate - %	2nd	7.20	9.37	9.97		
Retail Sales - Mil. $	2nd	15.90	18.13	22.30	-12.30	-28.70
K. Montgomery County--Coffeyville Area - Quarterly						
Civilian Labor Force - Tho	2nd	18.13	17.73	17.37	2.26	4.41
Employed - Tho	2nd	17.07	16.37	16.00	4.28	6.67
Unemployed - Tho	2nd	1.07	1.37	1.37	-21.95	-21.95
Rate - %	2nd	5.97	7.77	7.80		
Retail Sales - Mil. $	2nd	15.55	16.97	16.75	-8.37	-7.18

SOURCE: Ks. Dept. of Human Resources, Ks. Dept. of Revenue

TABLE EIGHT: BANKING ACTIVITY IN KANSAS*

Area		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Federal Reserve Member Banks						
Kansas - Quarterly, in Millions						
Total Deposits -	2nd	33155.0	32940.7	31111.0	0.65	6.57
Total Checkable -	2nd	5994.7	5937.3	5456.0	0.97	9.87
Demand Deposits -	2nd	3082.7	3073.0	2986.0	0.31	3.24
Other Checkable -	2nd	2912.0	2864.3	2467.5	1.66	18.01
Small Time and Savings -	2nd	22688.3	22423.7	21402.5	1.18	6.01
Large Time -	2nd	4472.0	4579.7	4247.5	-2.35	5.29
Kansas City, KS - Quarterly, in Millions						
Total Loans -	2nd	1643.33	1565.23	1359.30	4.99	20.90
Real Estate -	2nd	803.40	734.63	587.80	9.36	36.68
Commercial and Industrial -	2nd	502.87	461.93	404.10	8.86	24.44
Consumer -	2nd	105.53	122.40	129.95	-13.78	-18.79
Total Deposits -	2nd	1785.53	1759.70	1558.30	1.47	14.58
Demand Deposits -	2nd	236.23	225.03	215.70	4.98	9.52
Time and Savings -	2nd	985.83	967.20	896.35	1.93	9.98
Topeka - Quarterly, in Millions						
Total Loans -	2nd	321.97	323.93	333.90	-0.61	-3.57
Real Estate -	2nd	100.43	97.07	86.75	3.47	15.77
Commercial and Industrial -	2nd	111.37	114.87	124.95	-3.05	-10.87
Consumer -	2nd	47.80	50.30	52.40	-4.97	-8.78
Total Deposits -	2nd	521.87	528.13	507.05	-1.19	2.92
Demand Deposits -	2nd	165.63	164.70	144.35	0.57	14.74
Time and Savings -	2nd	225.60	233.00	244.00	-3.18	-7.54
Wichita - Quarterly, in Millions						
Total Loans -	2nd	1247.73	1236.57	1217.20	0.90	2.51
Real Estate -	2nd	229.83	204.00	196.95	12.66	16.70
Commercial and Industrial -	2nd	511.17	523.87	471.55	-2.42	8.40
Consumer -	2nd	359.57	350.57	347.45	0.00	0.90
Total Deposits -	2nd	1822.07	1792.47	1816.45	1.65	0.31
Demand Deposits -	2nd	462.87	445.37	448.00	3.93	3.32
Time and Savings -	2nd	903.83	884.17	852.75	2.22	5.99

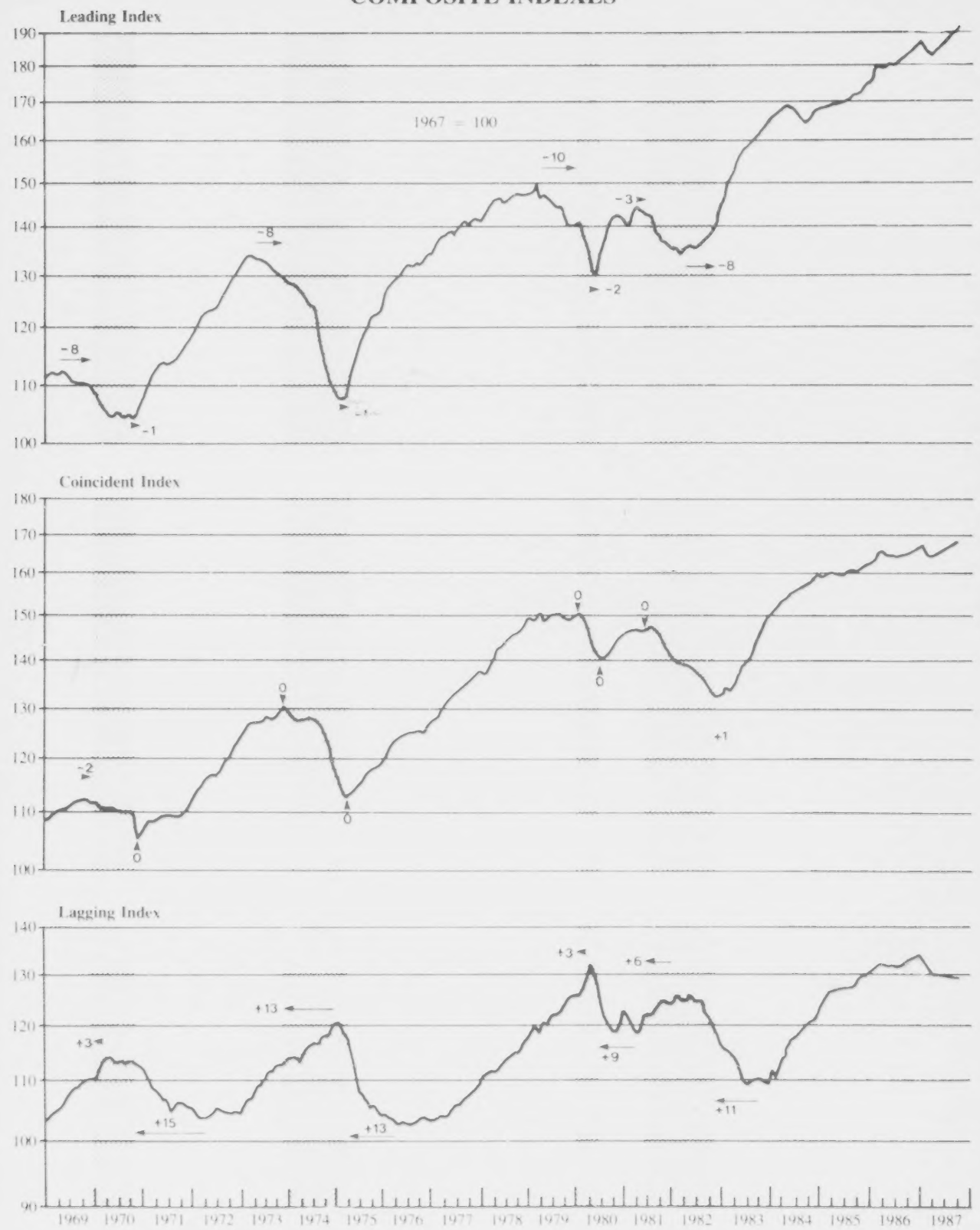
SOURCE: Federal Reserve Bank of Kansas City.
* Figures for all commercial banks are no longer provided by the Federal Reserve Bank of Kansas City. It should be noted, therefore, that the data above pertain only to Federal Reserve member banks of Kansas and do not represent all commercial banking in the state. Since 1980, these data have covered approximately 50 percent

TABLE NINE: SAVINGS AND LOAN ACTIVITY IN KANSAS

Area		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Kansas - Quarterly, in Millions						
Total Assets -	2nd	19161.8	12415.2	15985.5	54.34	19.87
Mortgage Loans -	2nd	14241.9	13638.8	12963.5	4.42	9.86
B. Kansas City, KS - Quarterly, in Millions						
Total Assets -	2nd	2004.07	1919.27	1902.53	4.42	5.34
Mortgage Loans -	2nd	1463.33	1446.33	1500.27	1.18	-2.46
C. Topeka - Quarterly, in Millions						
Total Assets -	2nd	2931.47	2913.60	2887.90	0.61	1.51
Mortgage Loans -	2nd	2479.37	2431.63	2339.23	1.96	5.99
D. Wichita - Quarterly, in Millions						
Total Assets -	2nd	2346.90	2300.23	2226.70	2.03	5.40
Mortgage Loans -	2nd	1773.53	1754.33	1684.03	1.09	5.31

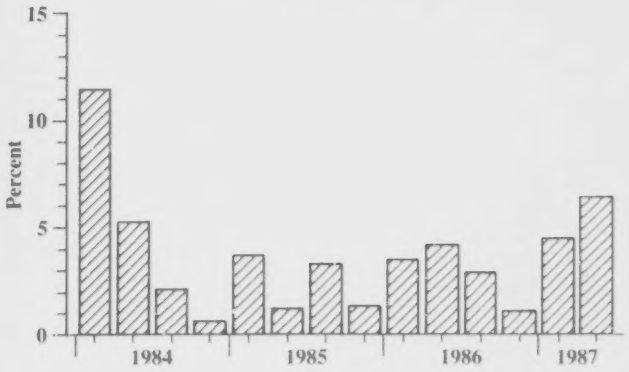
SOURCE: Federal Home Loan Bank of Topeka

COMPOSITE INDEXES

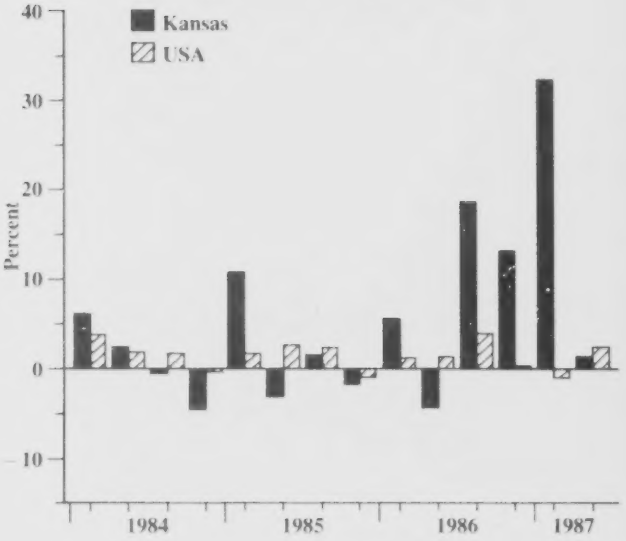


Note: Numbers entered on the chart indicate length of leads (-) and lags (+) in months from reference turning dates. Shading indicates periods of recession.

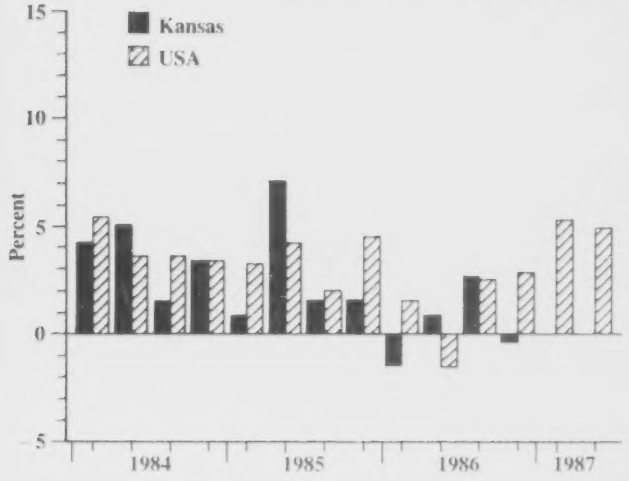
Average Annual Growth Rate of GNP
(1982 Dollars)



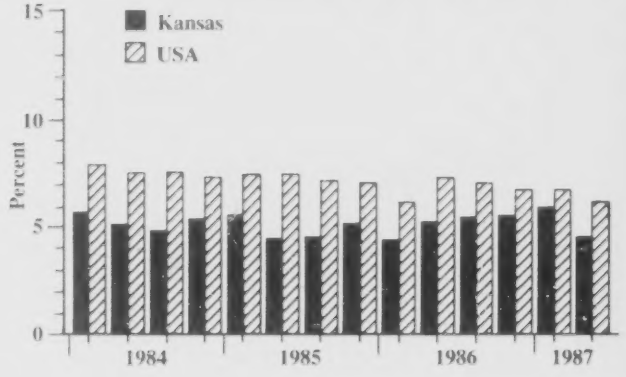
Growth of Retail Sales
(In Current Dollars)



Rate of Inflation
(CPI-U, Seasonally Adjusted)



Civilian Unemployment Rate



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KANSAS BUSINESS REVIEW

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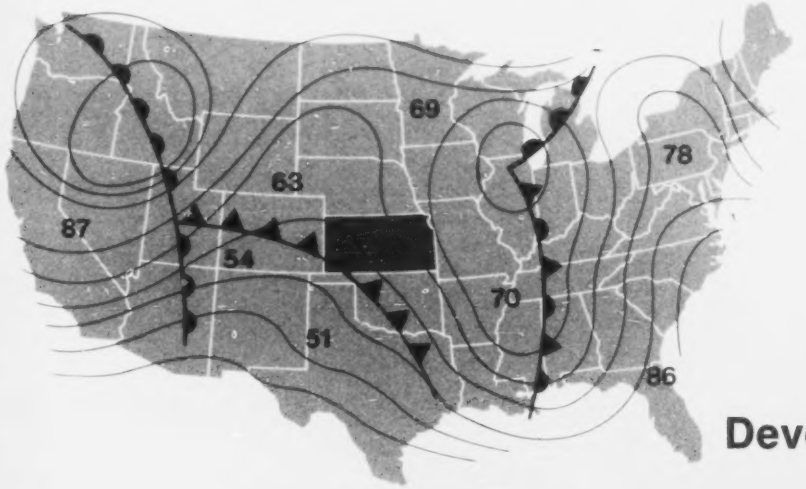
Dennis Karney



Targeting New Interstate Trade: A Proposal for Reforming Kansas Development Tax Policy
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Economic Indicators

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KANSAS BUSINESS REVIEW

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Advisory Board of the Institute for Public Policy and Business Research—Edward Bruske, President, Kansas Chamber of Commerce and Industry; Harland Priddle, Secretary of Commerce; Executive Vice Chancellor Judith Ramaley; Vice Chancellor Frances Horowitz; Anthony Redwood, Executive Director, Institute for Public Policy and Business Research; Dean John O. Tollefson, School of Business; Joseph Sicilian, Chairman, Department of Economics.

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The purpose of the *Kansas Business Review* is to provide a forum for the dissemination of research studies and reports in the fields of economics and business that would be of special interest and relevance to business persons, public officials, and academicians in Kansas and the Plains Region.

The Editorial Review Board welcomes submissions of original manuscripts as well as reports on research and opinion pieces in the areas of economics and business administration. The style, however, should emphasize exposition rather than technical details. All submissions will be reviewed initially by the editorial staff and, when judged appropriate, will be sent to referees who are knowledgeable about the content.

Manuscripts for consideration should be typed, double-spaced, and submitted in triplicate. In general, length should not exceed three thousand words. Authors are reminded of the combined scholarly/practitioner orientation of the *Kansas Business Review*, which necessitates the contents being in a form readable by that audience.

Submit manuscripts to: Editor, *Kansas Business Review*, The Institute for Public Policy and Business Research, 607 Blake Hall, The University of Kansas, Lawrence, Kansas 66045-2960.

We invited economists from each of the Regents' universities to share their forecasts for 1988 with our readers.

1988 Economic Outlook
The U.S. and Kansas

Norman Clifford

Dr. Clifford is a research associate at the Institute for Public Policy and Business Research and an assistant professor of economics at the University of Kansas.

Forecasts produced at the Institute for Public Policy and Business Research at the University of Kansas predict a slowdown in both the U.S. and Kansas economies in 1988, but do not indicate the occurrence of a recession during the year. The forecasts are generated by simultaneous equation econometric models, and the parameters of the models are estimated using historical data. We based our forecasts on the Indiana University Econometric Model of the United States. Kansas forecasts come from the Kansas Econometric Model, under development at the Institute for Public Policy and Business Research at the University of Kansas.[1]

Each model has variables whose values are determined within the model, so-called endogenous variables, and variables whose values are determined outside the model, so-called exogenous variables. The national model has 250 endogenous variables and 57 exogenous variables, and the Kansas model has 90 endogenous variables and 23 exogenous variables. In the U.S. model, exogenous variables relate to national economic policies or to the international economy as it affects the United States. Examples of exogenous variables for the U.S. model would be government spending levels, federal tax policies, the size of the money stock, the quantity of imported oil and petroleum products, and the price deflator for imported oil. In the Kansas model, exogenous variables are national variables that affect the performance of the Kansas economy, such as gross national product, the consumer price index, and interest rates.

Given this framework, we determined the exogenous variables for the national model, choosing a likely scenario for national economic policies and the behavior of the rest of the world. We use the national model to forecast the values of the endogenous national variables, which we in turn use as exogenous data for the Kansas model. The Kansas model forecasts the endogenous Kansas values. Thus, the quality of both the national and Kansas forecasts depends in part on the ability of the forecaster to predict national economic policies and the behavior of the rest of the world during the forecast period.

The forecasts presented here are based upon our assumptions about the exogenous events that are driving the models:

1. The federal government will exercise some degree of fiscal restraint, cutting the budget beyond the Gramm-Rudman targets. In particular, government expenditures will still grow 3.69 percent in 1988, but government receipts will grow even faster, at an 8.83 percent annual rate, reducing the deficit to $114.5 billion for 1988, down from $155.6 billion in 1987. Most of the increase in receipts will come from contributions to social insurance, which will grow at a 10.42 percent annual rate, or $36.2 billion, and personal tax and non-tax receipts, which will grow at an annual rate of 8.62 percent or $34.8 billion.

2. After responding to the stock market crash by injecting money into the economy (M1 is estimated to have grown 8.17 percent in the fourth quarter of 1987 and 4.64 percent in the first quarter of 1988), the Federal Reserve will begin to exercise monetary restraint around the middle of 1988. During 1988, M2 will grow 4.77 percent, and M1 will grow 3.72 percent. This contrasts with double-digit growth rates of M1 in 1986 and 1987.

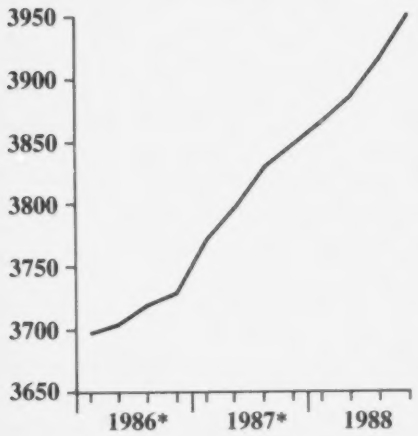
3. World prices will grow at an average rate of 4.3 percent, and world oil prices will grow at 4.8 percent.

4. Growth in consumer spending will slow during 1988. The stock market crash of October 1987 reduced nominal wealth for some consumers and left others feeling that the world is becoming riskier. We assume that these wealth effects of the crash are small and short-lived. In particular, we assume that real consumer spending did not grow at all in the last quarter of 1987 (after growing at a nearly 5 percent annual rate in the third quarter) and will grow only very slowly, at a 1.5 percent annual rate, for the first half of 1988. It will pick up in the second half of the year however growing at an annual rate of 3 percent during that period. For the year, real consumer spending will grow at a rate of 1.95 percent, just under its 2 percent rate of growth for 1987.

National Forecast

Given these assumptions, the national forecast for 1988 is for slow economic growth, especially in the first half of the year, but no recession. The path of real gross national product, which is illustrated in Figure 1, captures the essential story of the national economy for the year. For the first half of 1988 the economy will be sluggish, with real GNP growing at only a 1.8 percent annual rate.

Figure 1
Gross National Product Forecast
(billions of 1982 dollars)



* Historical data are provided for 1986 and the first three quarters of 1987.

In the latter half of the year, as the effects of the stock market crash wear off, the economy will pick up and real GNP will grow at an annual rate of 3.3 percent over that period. Real GNP will grow by 2.43 percent for the entire year, in spite of the less than 2 percent growth in real consumption spending.

U.S. employment will grow consistently throughout 1988, averaging 1.8 percent, significantly below its average growth rate of 2.6 percent in 1987. Slower growth of the economy will cause unemployment, which crept below 6 percent in the last two quarters of 1987, to edge above 6 percent in the first quarter of 1988 and to increase gradually throughout the year (Figure 2). The average for the year will be 6.13 percent, about the same as for 1987.

Slower growth will also reduce pressure on prices, and the inflation rate as measured by the rate of change of the consumer price index will gradually decline during 1988 after having reached nearly 6 percent in the last quarter of 1987 (Table 1). The average for the year will be 4.7 percent, a rate which is high relative to the rates of the past two years but still within what many would consider to be an acceptable range.

Another effect of the stock market crash and the temporary cooling off of the economy will be to reduce inflationary expectations. Lower expectations of inflation, along with reductions in the federal deficit and some easing of monetary policy will put downward pressure on interest rates during the last quarter of 1987 and the early part of 1988. However, the more restrictive monetary policy beginning in the second quarter of 1988 will cause interest rates to rise gradually over the last three quarters of the year. On average interest rates will be up about one-half of a percentage point over those of 1987. Figure 3 shows the forecasted interest rates on three-month treasury bills, the prime lending rate and the AAA bond rate.

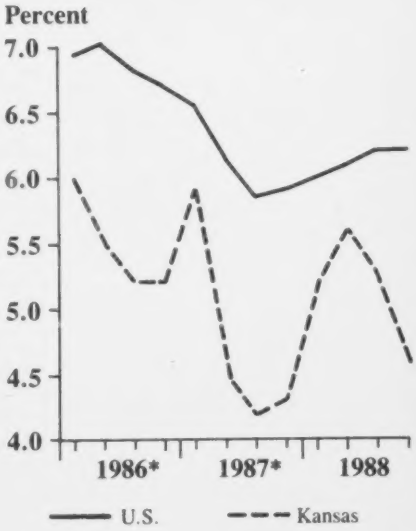
Consumption spending, investment spending, government purchases and net exports, the components of gross national product, will show varying real rates of growth during 1988. Although real consumption spending will grow at less than 2 percent for the year, the rate of growth will be significantly higher for some types of consumption. The biggest gain in consumption, 3.05 percent, will come in services, with real consumption of electricity and gas increasing 7.17 percent. The next biggest gain, 2.24 percent, will be in durable goods, although automobile purchases by consumers will fall slightly in real terms. Consumer purchases of nondurable goods will be only slightly higher than their 1987 level in real terms.

Real nonresidential fixed investment will increase by 3.99 percent, with all of the growth coming in producers' durable equipment. Real residential investment will increase by 1.07 percent. The increase in business inventories will be smaller in 1988 than in 1987 as firms adjust to the new higher inventory levels built up in recent quarters.

Purchases of goods and services by all levels of government will increase by 2.24 percent, with federal defense purchases increasing by 2.07 percent and federal nondefense purchases increasing by 1.60 percent.

The declining trade deficit will boost real GNP growth as the dollar continues to fall. A trade-weighted average of the dollar will fall 10.19 percent in 1988 after falling 13.27 percent in 1987. As a result, real exports will rise 9.3 percent to $459.6 billion, while real imports increase only 3.58 percent to $571.6 billion, reducing the real trade deficit from

Figure 2
Forecasted Unemployment Rates, U.S. and Kansas



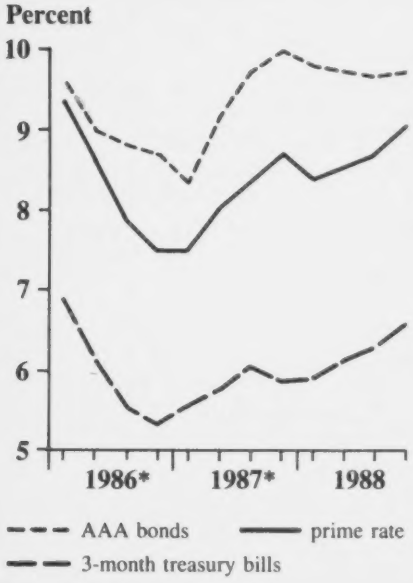
* Historical data are provided for 1986 and the first three quarters of 1987.

Table 1
Forecasted Rate of U.S. Inflation

	Q1	Q2	Q3	Q4
1988	4.81	4.47	4.20	4.05
1987*	5.27	4.90	3.88	5.84
1986*	1.60	−1.30	2.43	2.66

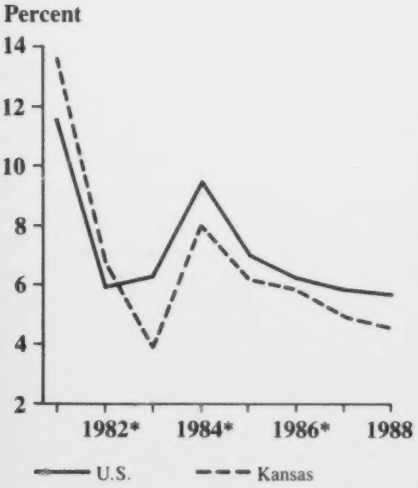
* Historical data are provided for 1986 and the first three quarters of 1987.

Figure 3
Forecasted Interest Rates



* Historical data are provided for 1986 and the first three quarters of 1987.

Figure 4
Personal Income Growth Forecasts, U.S. and Kansas



* Historical data are provided for 1981-1986 and the first three quarters of 1987.

$131.3 billion to $112 billion. However, because the value of the dollar is declining, the value of imports in current dollars will grow much more quickly relative to the value of exports, and the trade deficit in current dollars will keep increasing, from $117.1 billion in 1987 to $126.1 billion in 1988.

U.S. personal income in current dollars will grow 5.7 percent in 1988 compared with 5.8 percent in 1987. Real personal income will grow 1.8 percent in 1988. Disposable income will grow less than personal income, due to Social Security tax increases. Disposable income will grow 5.2 percent in current dollars, 1.4 percent in real terms.

Kansas Outlook

The slowdown in the national economy will be mirrored in the performance of the Kansas economy. In fact, as can be seen by comparing growth rates of employment and personal income in Kansas with their national counterparts in Figures 4 and 5, Kansas will grow even more slowly than the nation in 1988.

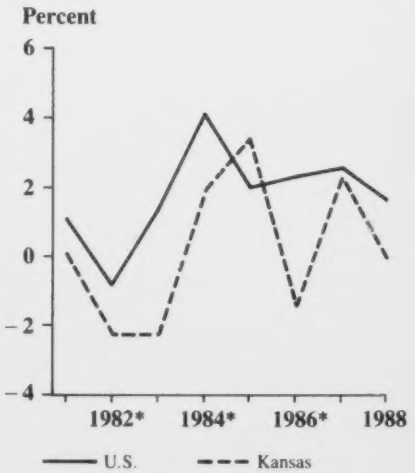
On average, Kansas employment will not grow in 1988, since decreases in farm employment and self-employment will offset growth in wage and salary employment. Kansas wage and salary employment by place of work will grow 1.2 percent in 1988, compared with the national forecast for 1.6 percent growth. But Kansas farm employment will fall by 6.8 percent, while national farm employment will fall by only 1.3 percent. Further, self-employment in Kansas will fall by 5.2 percent. With employment constant and a modest 0.4 percent growth in the labor force, unemployment will be up slightly, from 4.7 percent in 1987 to 5.4 percent in 1988. Figure 2 includes the quarterly forecast for the Kansas unemployment rate.

Kansas employment growth will vary within sectors. Employment in manufacturing of nondurable goods will grow at 1.5 percent, with employment in printing and publishing leading the way at 3.4 percent. Employment in durable goods manufacturing will increase at a very modest 0.4 percent, constrained mainly by a 1.3 percent reduction in employment in transportation equipment. Two conflicting forces are at work in the transportation equipment industry. On the one hand, the continuing fall in the dollar should help to stimulate orders for aircraft from abroad. On the other hand, the slowdown of the national economy will reduce orders for private aircraft, and military orders are expected to fall somewhat.

Employment growth in sectors outside of manufacturing will also exhibit considerable variance. Employment in construction will grow by 1.6 percent, in transportation and utilities 0.5 percent, and in wholesale trade by 0.9 percent. Employment in retail trade will grow by 1.8 percent, in finance, insurance and real estate by 0.9 percent, and in services by 1 percent. Government employment in Kansas will increase by 1.4 percent, with a 2.1 percent drop in federal government employment more than offset by a 1.9 percent increase in state and local government employment.

For 1988, Kansas personal income in current dollars will grow by 4.5 percent, well below the national rate of 5.7 percent. Kansas wage and salary income will grow 5.2 percent, but falling farm proprietors' income and increasing contributions to social insurance will depress the

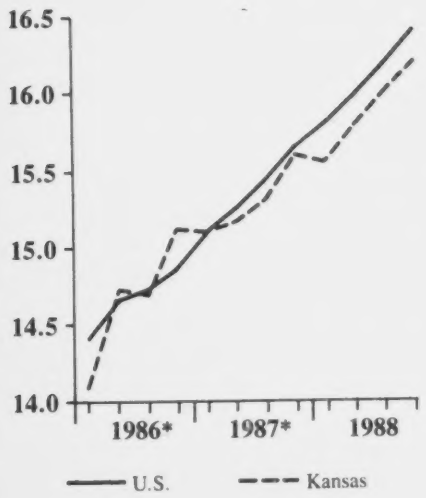
Figure 5
Employment Growth Forecasts U.S. and Kansas



* Historical data are provided for 1981-1986 and the first three quarters of 1987.

total. In real terms, Kansas personal income will grow by 0.6 percent compared with 1.8 percent for the nation as a whole. However, as Figure 6 shows, in per capita terms personal income will continue to closely track the nation.

Figure 6
Per Capita Personal Income
U.S. and Kansas
(in thousands of dollars)



* Historical data are provided for 1986 and the first three quarters of 1987.

The Role of Econometric Modeling

In judging the reliability of forecasts generated from an econometric model, it is important to clarify the role of the model in the forecasting process. Econometric modeling is not a technique that allows us to do away with the judgement of the forecaster. Rather it complements that judgement. In fact, the forecaster's judgement is required to get the model to produce any forecasts at all, since the forecaster must predict the path of government policies and other exogenous events. Thus one possible source of errors in the forecasts is the forecaster's inability to accurately predict the course of exogenous events.

A second possible source of error in the forecasts comes from the fact that the model specifies economic relationships inexactly. There are two reasons for this lack of total precision. One is that the model must necessarily be a simplification of the real world, if for no other reason than that the available economic data are incomplete. The other is that the quantitative relationships are estimates, based on relatively few observations of the economy in the past, and thus can never be guaranteed to exactly capture behavior over the whole range of economic activity.

A third possible source of error is that even if we were to have an exact model of the economy as it was yesterday, the structure of the economy may change: Tomorrow's economy may be fundamentally different from the past economy that we have been modeling. If so, we may be forecasting the future based upon an irrelevant past.

Given all the possible sources of error in the forecasts, why should one place any faith in the forecasts generated by these econometric models, especially given alternatives such as informal "judgmental" forecasts and pure time series forecasts?

As we have already noted, the use of an econometric model does not limit the role of the forecaster's judgement. If a judgmental forecaster uses his best judgement to predict that the government's budget will be reduced by $45 billion and that therefore GNP will grow by only 2 percent, he is using some informal model of the relationship between the government's budget deficit and the rate of growth of GNP. Since the econometric model can keep track of many more relationships than most of us can keep in our heads, and since its quantitative relationships are derived, using sound statistical principles, from much more economic data than any forecaster could informally analyze, the use of the econometric models should improve the quality of forecasts.

Nor can the judgmental forecaster, with his knowledge of recent events, surpass the forecaster who uses an econometric model. Any knowledge of recent economic events can and should be used to modify the forecasts of the econometric model, and we are able to incorporate informal knowledge about the economy into the econometric forecasts. Finally, econometric models can produce forecasts in much more detail than any judgmental forecaster can provide.

Note

1. The Kansas Board of Regents provided partial funding for this project.

M. Jarvin Emerson

For the past 22 years Professor Emerson, who is head of the economics department at Kansas State University, has prepared all or the majority of the annual *Kansas Economic Report* that is the basis for Kansas revenue forecasts each year. He was the primary developer of the Kansas models used for his forecasts. The following article is taken from the 1988 report, commissioned by Kansas Division of Budget.

The usual uncertainty about the future of the economy was magnified by the October 1987 stock market crash. The associated consequences of this and other financial market problems dampen the outlook for both the national and Kansas economy for 1988. Although a recession is not forecast, income and employment will exhibit little growth.

The National Economy

Slower growth, no recession, higher inflation, lower interest rates, meager productivity gains, and financial market difficulties are the core of the 1988 economic outlook.

The aggregate forecasts for the U.S. economy in 1988 are for real gross national product, which rose at a lackluster 2.7 percent in 1987, to increase less than 2 percent, inflation to accelerate to 4.2 percent from 3.7 percent, and the unemployment rate to remain at 6.2 percent. Table 1 summarizes the national forecasts for 1988.

Consumer spending, which until last year had provided the primary thrust for real GNP growth in the current economic expansion, will be a drag on the growth rate in 1988. A number of factors combine to retard consumer spending. First, the stock market crash reduced household wealth and will have a depressing effect on consumer spending and confidence. Second, households will attempt to in-

Table 1
Major U. S. Economic Forecasts, 1988

	Percent
GNP (constant $)	1.9
Personal income (current $) growth	5.8
Consumer price index growth	4.2
Unemployment (monthly average)	6.2

crease their savings after the savings rate tumbled to 3.5 percent in 1987. Third, real disposable income growth will remain sluggish.

A key ingredient in even a weak growth forecast for 1988 is the anticipated robustness in capital goods spending. This component of total investment spending is forecasted to expand by 5.5 percent in real terms. Capital spending will be propelled by rising exports of manufactured products, near capacity levels in several major industries, and improved profits. Backlogs of unfilled orders in late 1987 should bring strong growth in this area through 1988. Other components of investment spending will be weak with both residential and nonresidential construction expenditures falling below last year's levels after adjusting for inflation.

Government spending will increase at a slower pace than in 1987. Federal government spending in real terms will increase less than 1 percent, and state and local government spending will rise 1.4 percent. The deficit reduction package of late 1987, a weaker economy, and prior spending curbs, will hold government spending increases significantly below those of most of the past 15 years.

The depreciated value of the dollar will continue to spur export growth and retard the growth of imports. Along with capital goods expenditures, exports will be the main ingredient in a positive growth scenario for this year. The expansion in exports, after adjusting for inflation, is forecasted to exceed 11 percent, while imports will decline about 1 percent.

Although the growth rate will sag, the pace of inflation will not. The consumer price index, which rose 3.7 percent in 1987, is predicted to increase to 4.4 percent this year. Energy, food, and other goods prices will increase 3 to 3.5 percent. The price level increase for services, however, will be nearly 5 percent. The prices of imported consumer goods will rise by more than 10 percent as the value of the dollar continues to weaken. Weak productivity gains and rising wages will more than double the rate of increase in unit labor costs to 3.6 percent.

The economy will generate just enough additional jobs this year to match the increase in the labor force, leaving the unemployment rate unchanged from the 6.2 percent 1987 level. Stronger exports will boost manufacturing jobs, construction employment will fall, and the service sector and mining will hike employment.

Financial markets will continue to pose a threat to economic stability. The large international, federal, and consumer debt accumulation poses challenges not previously experienced. The oscillations set off by the stock market crash seem to be moving toward equilibrium. However, distortions in short-term financial markets remained in early 1988.

The Kansas Economy

Like the national economy, the state's economy will continue to expand, but the growth will be at a reduced pace. The slowdown will be moderate but widespread, affecting the majority of the state's industries and regions. Table 2 summarizes the Kansas forecasts.

Employment growth will slow to about 1.5 percent in 1988 compared with a 2.6 percent advance in 1987. Two major industry groups may fare better in 1988 in spite of a general economic slowdown. Both mining and manufacturing have improved prospects.

After a year and a half of substantial decline, the mining sector began a turnaround in mid-1987 that is expected to carry over into 1988. Still far below 1985 levels, oil prices moved some 33 percent higher than the lows of 1986 before declining again in late 1987. Oil prices are forecasted to move higher in 1988 with corresponding increases in extraction activity.

Manufacturing has begun to experience the effects of the lower valued dollar, and exports are again increasing. Kansas manufactured exports have exhibited a significant sensitivity to exchange rate fluctuations. From 1976 to 1980, when the dollar was depreciating in value, Kansas manufactured exports expanded 127 percent, the thirteenth largest state increase. However, from 1981 to 1983, when the dollar was appreciating, Kansas manufactured exports fell 25 percent, the fifth largest rate of decline among the states. Although the value of the dollar is not the only factor influencing export performance, its current position will continue to stimulate export expansion for many Kansas manufacturers.

Construction activity will be sluggish as the economy decelerates. Although interest rates may recede from 1987 levels, any decline will be too small to produce any private sector construction rebound in the current economic environment.

The transportation sector will continue to follow opposite trends. Contraction in railroad transportation will con-

Table 2
Major Kansas Economic Forecasts, 1988

	Percent
Gross state product growth	4.7
Personal income growth	4.9
Employment growth	1.5
Unemployment rate	5.0

tinue as a result of deregulation and restructuring, while motor freight and warehousing remain on an expansion path.

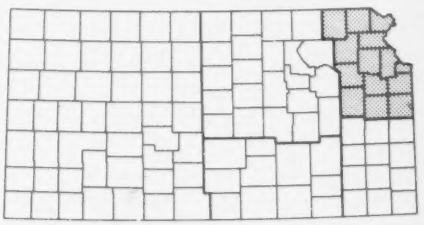
Wholesale and retail trade activity will mirror the slowdown in the economy and grow at a moderate rate. Service sector employment will grow more rapidly than employment for the state as a whole, but the increase will be in lower paying jobs.

Banks and savings and loan institutions have had and will continue to have portfolio problems requiring restructuring. However, improving conditions in agriculture and mining in the past year have mitigated this problem.

As indicated in Table 3, Kansas personal income is forecasted to increase at a 4.9 percent rate in 1988, which, if it materializes, will be the smallest rate of increase since 1983 and the second smallest increase in 20 years. Wages and salaries are expected to rise 5.2 percent with other labor income increasing 4.3 percent. Farm proprietors' income will be slightly lower as a result of lower prices, while nonfarm proprietors' income will expand 6.2 percent. Property income will be 4.7 percent higher primarily as a result of an increase in the savings rate. Cost-of-living adjustments and an increase in unemployment will contribute to a rise in transfer payments of 6.2 percent. Higher social security contributions will push that component 9.3 percent higher.

Table 3
Kansas Personal Income, 1988 Forecast
(millions of dollars)

	1987	1988	Percent change 1987-88
Wages and salaries	19,967	21,010	5.22
Other labor income	1,937	2,019	4.26
Proprietors' income			
Farm	1,503	1,490	−0.85
Nonfarm	3,220	3,419	6.18
Property income	6,738	7,055	4.71
Transfer payments	5,089	5,406	6.21
Residence adjustment	1,232	1,305	5.93
Less: Social insurance	−1,609	−1,758	9.26
Total	38,074	39,946	4.92



Northeast Kansas

Frank Hefner

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As the state moves so goes the county. This is the basic concept behind what is often called top-down modeling. An economic variable at the state level is used to predict that variable at the county level. For this article, we used linear regressions on historical data to discover if there is a relationship between the state and each of the northeast Kansas counties. We examined the following variables using linear regression analysis:

1. personal income
2. employment
3. unemployment rates

A linear regression postulates a straight-line relationship between the two variables and provides statistical techniques to analyze the significance of the independent variable in determining the dependent variable. For almost all of the 14 counties investigated, there is no statistically significant relationship between state employment and county employment or between state and county unemployment rates. There is, however, a strong relationship between Kansas personal income and personal income for northeast Kansas counties.

Knowing that there is a statistically significant relationship between state personal income and personal income in northeastern counties, we can use forecasts from the Kansas Econometric Model to forecast county personal income. For example, the average of the Kansas Econometric Model's quarterly forecasts for total Kansas personal income is $30,538,350,000, assuming fiscal restraint on the national level. Using this forecasted value in the equation for Johnson County, we find that 1988 total personal income forecast is $4,605,155,000. Thus, each county has its own forecast for personal income using the forecasted value for the state from the Kansas Econometric Model. Table 1 shows forecasts for each county.

Note that the size of the coefficients is important. The size indicates the magnitude of the effect of changes in the state level of personal income on the county. For example, Johnson County's personal income will increase $200 thousand for every one million dollar increase in Kansas personal income, while in Brown county the increase will be only $2,100.

Table 1
County Personal Income as a Function of State Personal Income

County	Equation	R^2 (percent)	Forecast 1988
Atchison	= 97625 + 0.00244 (state)	91.7%	172,138,570
Brown	= 55995 + 0.00210 (state)	43.9	120,125,540
Doniphan	= 2524 + 0.00268 (state)	91.9	84,366,778
Douglas*	= −63373 + 0.0269 (state)	98.9	758,108,620
Franklin*	= 45393 + 0.00491 (state)	93.4	195,336,300
Jackson	= 2553 + 0.00294 (state)	91.1	92,335,749
Jefferson	= 10594 + 0.00309 (state)	93.7	10,495,750
Johnson*	= −1502515 + 0.20 (state)	98.5	4,605,155,000
Leavenworth*	= −10572 + 0.0212 (state)	89.3	636,841,020
Miami*	= 23724 + 0.00566 (state)	98.9	196,571,060
Nemaha	= −25932 + 0.00488 (state)	92.6	123,095,150
Osage*	= −4671 + 0.00399 (state)	94.3	117,177,020
Shawnee*	= 217344 + 0.0672 (state)	98.9	2,269,521,100
Wyandotte*	= 537229 + 0.0579 (state)	96.3	2,305,399,500

State = state personal income in thousands (forecasted $30,538,350)

* Counties that include the highway 'loop' formed by the intersections of I-70, I-135, the Kansas Turnpike, and I-35.

Source: The Kansas Econometric Model, and *Kansas Statistical Abstract*, 1979-1987.

Table 2
Personal Income Forecasts for 1985 (in thousands of dollars)

County	Actual	Predicted	Error (%)
Atchison	182,722	179,987	−1.5
Brown	132,090	126,881	−3.9
Doniphan	94,363	92,987	−1.4
Douglas	851,757	844,637	−0.8
Franklin	209,621	212,143	+1.2
Jackson	106,591	101,793	−4.5
Jefferson	120,457	114,897	−4.6
Johnson	5,416,590	5,248,487	−3.1
Leavenworth	653,535	705,034	+7.9
Miami	216,703	214,777	−0.9
Nemaha	138,628	138,792	+0.1
Osage	128,516	130,012	+1.2
Shawnee	2,487,081	2,485,681	−0.1
Wyandotte	2,548,778	2,528,775	−0.8

Actual Kansas income = $33,755,008,000

Source: *Kansas Statistical Abstract*, 1986-1987.

The R^2 values found in the table indicate the strength of the relationships. A value of 98 percent means that variations in Kansas personal income explain 98 percent of the variation in the county's personal income. R^2 values above 90 percent are considered to be very good.

As a check on the accuracy of the equations, Table 2 compares the actual levels of personal income in each county for 1985 (the latest figures available in the *Kansas Statistical Abstract*) with the levels that would have been forecasted by the equations. As the table shows, errors range from 7.9 to −0.1 percent. It is interesting to note that the least accurate personal income forecast is for Brown County, which is the most agricultural county in the region. In general, errors are small, confirming that the equations are good predictors of personal income in these counties.

One might wonder why the other relationships between state and county variables are not significant. Northeast Kansas turns out to be a patchwork of different economies. Each county's profile is quite distinct, and there is no unifying characteristic. For example, in Brown County 7.69 percent of 1984 employment was in agriculture, while agriculture only accounted for 0.1 percent of employment in Wyandotte County. Construction was 14.36 percent of total employment in Jefferson County but only 1.38 percent in Brown.

Not only does each county have a different profile of employment distribution, but population and employment growth rates are quite diverse. While three counties lost population between 1977 and 1984 and in two population was constant, Johnson County population grew 17.6 percent. In terms of employment growth between 1977 and 1984, six counties saw decreases, the largest being 12.4 percent in Atchison. Meanwhile, employment in Johnson County increased 52.7 percent.

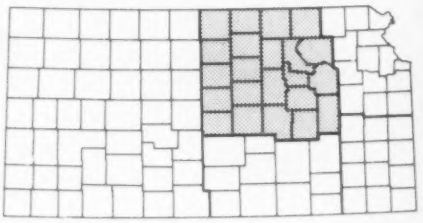
It is hard to generalize about northeast Kansas. The equations in Table 1 succinctly demonstrate the varied relationships between personal income in Kansas and the individual counties. Further, northeastern Kansas comprises counties where employment is declining, and it includes Johnson County, the fastest growing county in the state.

The general well-being of the region does not depend on any specific industries. In previous issues of the *Kansas Business Review*, we have noted that most population growth and most growth in the number of business establishments in the state have been in counties along the highway 'loop' of I-70 west to Salina,

I-135 south to Wichita, the Kansas Turnpike back up to Emporia, and I-35 east to Kansas City.[1] Our regression analysis reveals the same pattern for total personal income: The eight northeast Kansas counties with the highest personal income are on the loop, and the six with the lowest are not.

Note

1. Robert Glass, "Age Structure and Economic Growth in Kansas," *Kansas Business Review*, November-December 1982: 6-10; and Charles E. Krider and Daniel L. Petree, "Recent Business Formation in Kansas," *Kansas Business Review*, Spring-Summer 1985: 1-8.



North Central Kansas

Robert B. Catlett
Arthur J. Janssen

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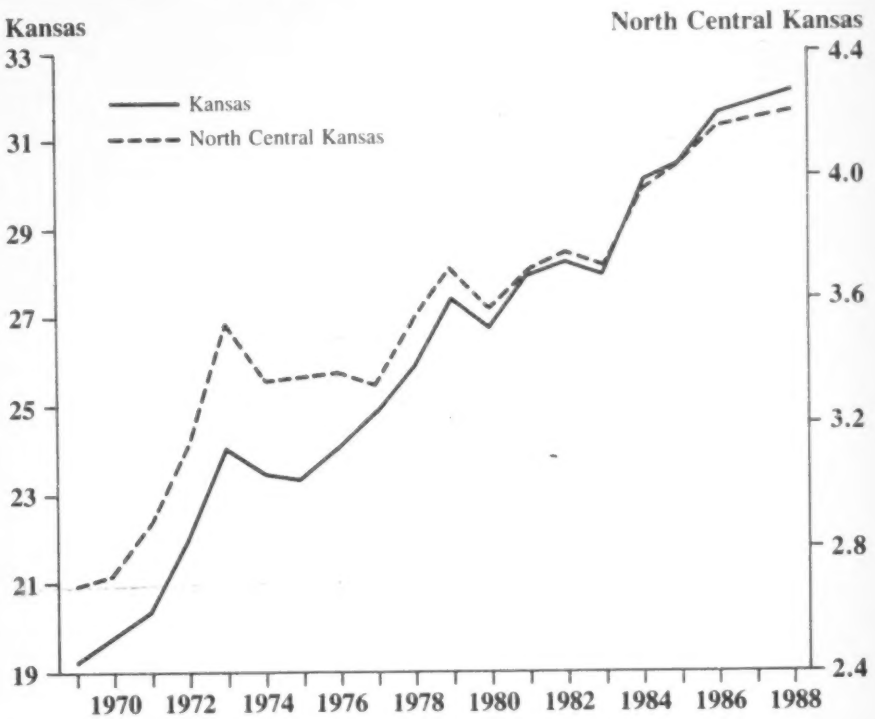
Ordinarily a researcher would feel a little uneasy developing a forecast for a particular region without some type of economic model for that region. But for north central Kansas, we find that employment and real income patterns are remarkably similar to those of the state. Hence, we can feel more comfortable using forecasts for the state economy to project employment and income in this region. Fortunately, we can use the forecasts derived from the new state model developed at the University of Kansas. It is important to note that the results presented here apply to the aggregated 22-county region and do not necessarily describe the economic picture for each community within the region.

Income

The close relationship between real personal income for the region and for the state referred to above is illustrated in Figure 1.[1] The scale on the left measures real personal income for the state and the scale on the right measures real personal income for north central Kansas. Figure 2 compares real nonfarm personal income in the region and in the state. Real personal income for Kansas has fluctuated, but in general it has grown over the past 20 years. In the 22-county region we find the same general growth pattern, but much less fluctuation. Figure 3 shows that historically total income for the region has fluctuated much more than nonfarm real income.

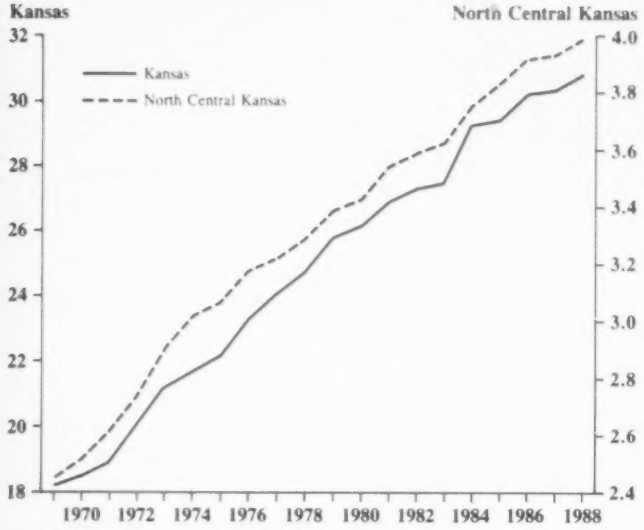
Income growth has not been uniform among industries. For example, real personal income from manufacturing has more than doubled since 1969. Income in the service sector increased by approxi-

Figure 1
Personal Income, Kansas and North Central Kansas (in millions of 1982 dollars)



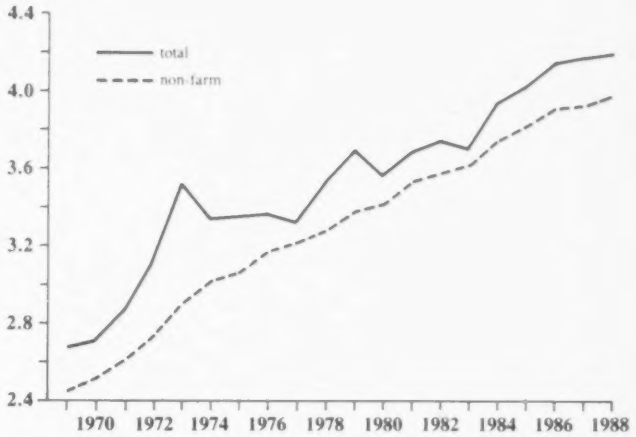
Source: Calculated using data from the Bureau of Economic Analysis and the Kansas Econometric Model.

Figure 2
Non-Farm Income
Kansas and North Central Kansas
(in millions of 1982 dollars)



Source: Calculated using data from the Bureau of Economic Analysis and the Kansas Econometric Model.

Figure 3
Total and Non-Farm Income
North Central Kansas
(in millions of 1982 dollars)



Source: Calculated using data from the Bureau of Economic Analysis and the Kansas Econometric Model.

Figure 4
Employment, Kansas and North Central Kansas

Source: Calculated using data from the Bureau of Economic Analysis and the Kansas Econometric Model.

Figure 5
North Central Kansas Retail Trade

Source: Calculated using data from the Bureau of Economic Analysis and the Kansas Econometric Model.

mately 50 percent, while income from agriculture and retail trade both declined during the past 20 years.

Employment

Employment patterns for the region are similar to those for the state with some notable exceptions. During the recession of the early 1980s, employment in the region did not decrease as it did in the state (Figure 4). Growth in employment in the region has tapered off in recent years, similar to the regional population trends.

Most of the private nonagriculture sectors show some modest employment growth. Some major changes have taken place in employment. Government employment has decreased most, though it remains the largest employer. Within the government sector, large reductions in military employment have been partially offset by increases in state and local government employment, including education. Within the major sectors of north central Kansas, employment and income have usually shown the same trends. An exception has been retail trade, where employment has generally increased while real personal income from retail trade has declined (Figure 5).

Outlook

As the figures illustrate and as we have mentioned, we expect income and employment in the region to follow the trends for income and employment in the state. Using the figures for 1988 income and employment derived from the state model, we expect employment in north central Kansas to remain relatively stable, real personal income to increase 0.5 percent, and real nonfarm personal income to increase by 1.4 percent in 1988.[2]

Notes

1. Income data have been deflated using the personal consumption deflator (1982 = 100). The data from 1969 to 1984 are from the Bureau of Economic Analysis, U.S. Dept. of Commerce. The recent data are derived from the Econometric Modeling Project at the University of Kansas.

2. The forecasts were obtained from the following equations:

$$\text{Real Regional Personal Income}_t = \underset{(3.568)}{624187.8} + \underset{(15.923)}{.1118257}\ \text{Real Kansas Personal Income}_t + E_t$$

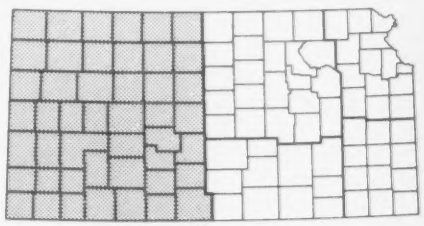
$R2 = .987$

$$\text{Real Regional Nonfarm Personal Income}_t = \underset{(5.133)}{428852.2} + \underset{(32.830)}{.1155588}\ \text{Real Kansas Nonfarm Personal Income}_t + E_t$$

$R2 = .987$

$$\text{Regional Employment}_t = \underset{(6.328)}{59452.81} + \underset{(13.292)}{.1202141}\ \text{Kansas Employment}_t + E_t$$

$R2 = .927$



Western Kansas

Jack McCullick
Robert C. Camp

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During 1987 western Kansans continued to leave the labor force.[1] The overall decline in both employment and the labor force, however, was much less dramatic than in the previous year. The Kansas Department of Human Resources reports that western Kansas employment in October of 1987, for example, was 156,314 compared with 158,514 in October 1986. During the same period the size of the labor force declined from 166,595 to 161,843.

Table 1 identifies changes in labor force and employment for northwest and southwest Kansas counties, and Figures 1 and 2 show clear seasonal patterns. The decline, nevertheless, appears to be over for both regions. The unemployment rate indicates that large numbers of workers have dropped out of the labor force. Many of these workers, in fact, have left the region.

Employment Outlook for 1988

The employment outlook for 1988 in western Kansas is essentially flat. Overall employment will undoubtedly follow the seasonal pattern of the past. Wheat, beef, and oil prices are the most potentially variable factors in the western Kansas employment equation, and with the possible exception of oil, prices are not expected to change enough to greatly influence employment. A brief discussion of these individual sectors of the economy follows.

Agricultural Outlook

The 1988 outlook for agriculture will discuss land values with a short comment on the impact of the dollar devaluation and the level of interest rates for agriculture. Finally, the price behavior for the livestock and grain sectors will be briefly discussed.

Land Values

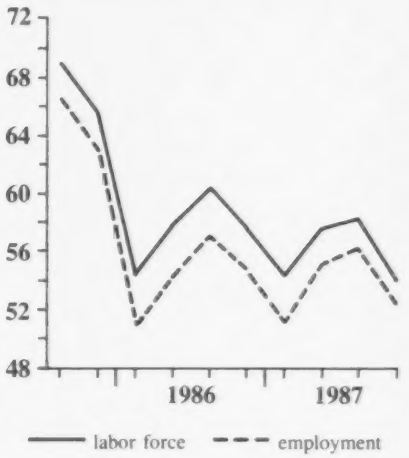
A short and selective history of agriculture suggests that the farm economy was reasonably healthy prior to the collapse that began in 1981. This conclusion is based on the substantial gains in export volume and asset values that were realized in the 1970s. During the early 1980s farm land values fell substantially. Now, after six years of decline, the Federal Reserve Bank of Kansas City has indicated that farm real estate values stabilized through the first three quarters of 1987.[2] The average farm real estate values per acre as of September 30, 1987 for Kansas were as follows: nonirrigated, $403; irrigated, $583; and ranch land, $176. For the entire tenth district (Kan-

Table 1
Western Kansas Quarterly Employment

	Labor Force	Employment	Unemployment	Percent Unemployed
Northwest				
Oct. 1987	54,009	52,300	1,709	3.2
July 1987	58,192	56,153	2,039	3.5
Apr. 1987	57,605	55,204	2,401	4.2
Jan. 1987	54,334	51,223	3,111	5.7
Oct. 1986	57,546	54,750	2,796	4.9
July 1986	60,426	56,972	3,454	5.7
Apr. 1986	57,766	54,182	3,584	6.2
Jan. 1986	54,331	51,194	3,137	5.8
Oct. 1985	65,420	63,149	2,271	3.5
June 1985	69,031	66,712	2,319	3.4
Southwest				
Oct. 1987	107,834	104,014	3,820	3.5
July 1987	111,272	107,149	4,123	3.7
Apr. 1987	109,932	105,193	4,739	4.3
Jan. 1987	104,945	99,031	5,914	5.6
Oct. 1986	109,049	103,764	5,285	4.8
July 1986	115,345	109,131	6,254	5.4
Apr. 1986	110,729	104,678	6,051	5.5
Jan. 1986	104,407	99,470	4,937	4.7
Oct. 1985	119,811	115,597	4,214	3.5
June 1985	123,873	119,814	3,859	3.1

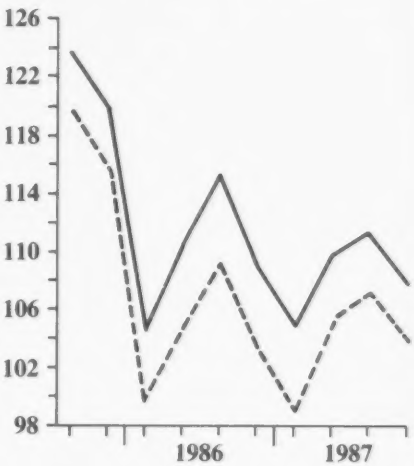
Source: Kansas Department of Human Resources.

Figure 1
Northwest Kansas Employment (in thousands)



Source: Kansas Department of Human Resources.

Figure 2
Southwest Kansas Employment (in thousands)



Source: Kansas Department of Human Resources.

sas, Missouri, Nebraska, Oklahoma, Colorado, New Mexico, and Wyoming) the respective figures were $414, $686, and $172.

The two variables that seem to play the greatest role in explaining farm land values are 1) the growth rate in the real return to land and 2) the real rate of interest.[3]

Interest Rates and the Dollar Devaluation

The October 19th stock market "sell off" confronted policy makers with new complications to their dealings with the budget and trade deficit. Apparently, the administration and the Federal Reserve System are going to attempt to avoid an election year recession.[4] If so, interest rates are likely to fall somewhat in the first quarter of 1988, and if the economy seems to be performing as desired, then some tightening may occur in the second quarter, with rates moving sideways at the somewhat higher rate for the remainder of the year. The dollar may be close to bottoming out, according to a number of financial analysts. Certainly the administration has been less concerned with stopping the dollar decline than with avoiding a recession.

Dollar devaluation and low interest rates will help agriculture. A cheaper dollar, at least in the short run, tends to make U.S. agricultural products more attractive to foreign buyers. Combined with the U.S. export-subsidy program, cheap dollars should lead to a continued increase in agricultural export sales. Increased export sales should boost domestic grain prices.

If the above analysis is accurate, there will be scattered improvement in the farm land prices discussed previously. This improvement would be associated with a somewhat higher real return to farm land, with the real rate of interest remaining essentially unchanged. The foregoing assumes that the rate of inflation remains near 4 percent.

Livestock

Livestock has been profitable over the past several years. Table 2 shows 1988 cattle prices as forecasted by analysts associated with DACO, INC., a Hays, Kansas, commodity firm.[5]

Grains

Because of the substantially reduced plantings for both corn and wheat, market analysts for Blunt Ellis Loewi of Milwaukee, Wisconsin, are projecting significantly higher prices for wheat in the first quarter, with the market moving sideways in a "trading range" the rest of the year.[6] Producers might want to consider hedging opportunities as they appear.

Like wheat prices, corn prices will probably move upward early this year, and lack of rainfall this summer during the critical tasseling stage may set the stage for even higher corn price movements.[7] Another hedging opportunity may occur.

Oil and Gas Outlook

Oil production declined during 1987 (see Figure 3), while the number of active rotary rigs rebounded slightly. Several industry participants agree that both production and drilling will hold fairly steady in 1988.[8] There will be some isolated pockets of increased drilling activity, but overall drilling activity is not expected to change much unless there are significant price changes. Drilling activity, of course, is highly dependent on price expectations for both the near and longer term. (The relevant period is the projected working life of the completed well.) The greatest impetus to drilling is for current prices to be both attractive (high enough to warrant projections of economic feasibility) and stable. As Figure 4 shows, recent prices have been neither attractive nor stable.[9]

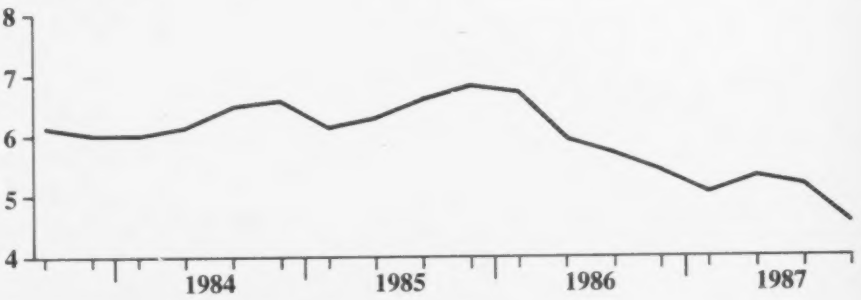
Future oil prices are highly uncertain. Since a significant amount of production occurs without being reported, world supply figures are not very accurate.[10] Expected prices for early 1988 range from $12 to $20 per barrel.[11] In any event, nobody expects prices to be particularly strong during the first half of 1988.[12] As we explained above, price level and price stability during the first half of the year will determine drilling activity during the second half.

Table 2
Forecasted Steer Prices

	1988:1	1988:2	1988:3	1988:4
1100-1300 lb. choice, Western Kansas	$64.35	$71.18	$68.03	$66.00
600-800 lb. feeders, Oklahoma City	$84.00	$79.66	$78.87	$77.04

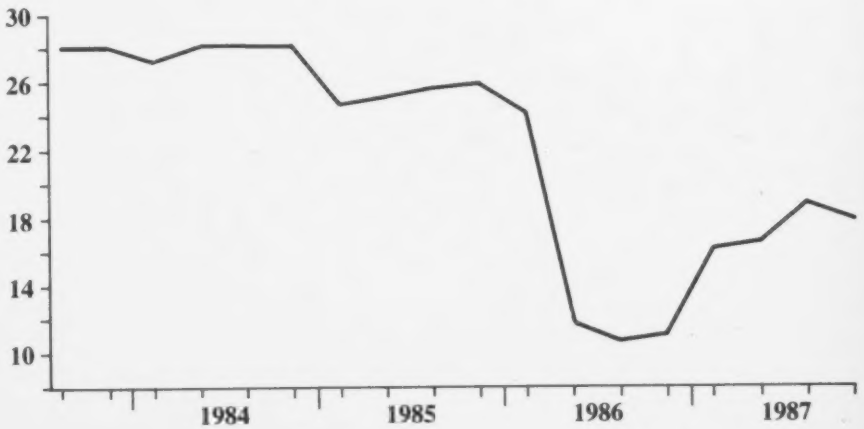
Source: DACO, INC., Hays, Kansas, October 1987.

Figure 3
Oil, Gross Output
(millions of barrels)



Source: Kansas Department of Revenue.

Figure 4
Average Price/Barrel Oil
(in dollars)



Source: Kansas Department of Revenue.

Overall oil production may decline somewhat during 1988 due to incomplete replacement of pumping capacity. Such decline will only influence production employment dramatically if price drops are extreme. The oil service sector of the industry is stronger after a period of consolidation and contraction, but some additional shakeout would probably occur if prices dipped much below $15 per barrel.[13]

Gas production will have little impact, if any, on employment, since current trends are likely to continue.

Notes

1. Independent Petroleum Association of America, Washington, DC, United States Petroleum Statistics, 1985 and 1987.

2. Federal Reserve Bank of Kansas City, *Financial Letter*, November 1987.

3. Federal Reserve Bank of Kansas City, *Economic Review*, April 1987.

4. "The Outlook," *Wall Street Journal*, December 21, 1987, p. 1.

5. DACO, INC., Hays, Kansas, October 1987.

6. Blunt Ellis Loewi, Milwaukee, Wisconsin, January 1988.

7. Blunt Ellis Loewi.

8. Projections of production and drilling activity are based on discussions with Randall Koudele, Michael Nelson, Timothy Vaughn, and other participants in the oil business.

9. Kansas Department of Revenue, Mineral Division, Mineral Tax Statistics, May 1983-October 1987.

10. Tanner, James, "As OPEC's Members Produce Above Quota, Big Data Gap Widens," *Wall Street Journal*, November 24, 1987, pp. 1, 20.

11. "Streamlining Braces Oil Services Industry for More Tough Times," *Wichita Eagle-Beacon*, January 10, 1988, pp. 1-2, section C.

12. Tanner, *Wall Street Journal*, 1987.

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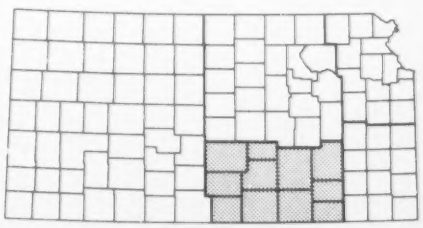


South Central Kansas

David Poynter

David Poynter is an associate director of the Center for Economic Development and Business Research at Wichita State University.

Most economists have adjusted their 1988 forecasts for the national economy to take account of the October stock market crash. Generally they have revised forecasts of real growth rates of GNP downward by one or two percentage points due to a market value loss of stocks, which is estimated to be $1 trillion. Before October 19, the national economy seemed to be gathering momentum:

- In the third quarter of 1987, GNP grew at a revised annual rate of 4.3 percent.
- Industry capacity utilization rates were at 81.7 percent as of November 1987, up from 79.4 percent from the year before.
- Sales of manufacturers, retailers, and merchant wholesalers during October were 7.7 percent higher than they had been in 1986.
- November retail sales increased 3.4 percent from the previous year.
- Industrial production in November increased 5.4 percent from its level the year before.
- Businesses planned to spend 7.3 percent more for new plant and equipment in 1988 than they had in 1987. In 1986 they had planned to increase their 1987 plant and equipment expenditures by only 2.9 percent.
- Actual capital outlays increased at an annual rate of 17.4 percent during the third quarter of 1987.
- New orders for manufactured goods increased 1.1 percent in October, the ninth increase in ten months.

The recent growth of the national economy is driven by the manufacturing sector, unlike growth since 1983, which was driven by consumer spending. Due to declines in agriculture, oil exploration, and durable goods manufacturing (particularly general aviation), neither south central Kansas nor the state participated in the early stages of the national recovery that began in 1982.

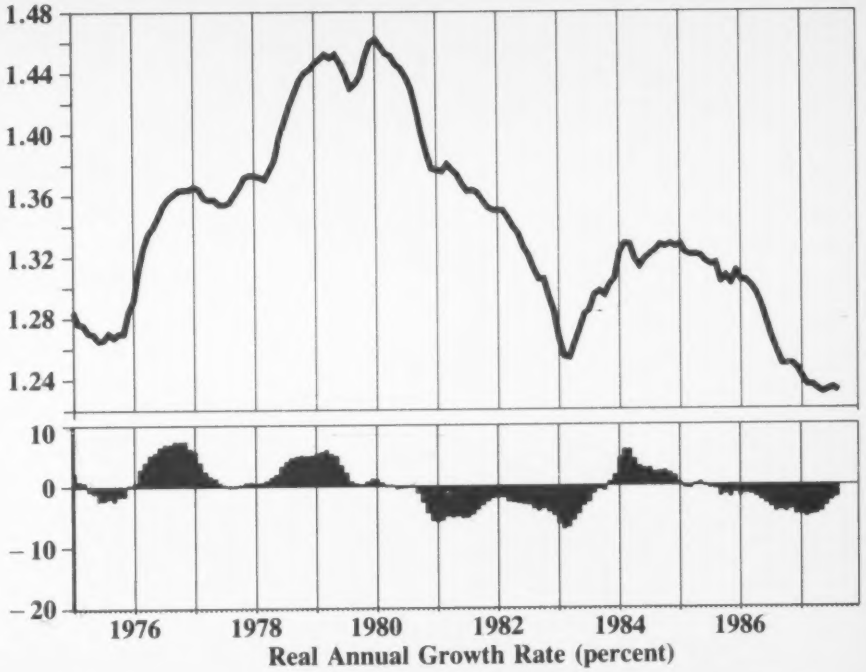
Export growth, due to declines in the U.S. trade-weighted dollar since 1985, has propelled recent growth in industrial production. The declining dollar has also helped domestic goods compete against imports.

Recently, the Kansas economy has shown positive signs of following national manufacturing trends. During the third quarter of 1987 manufacturing employment in Butler and Sedgwick counties grew at an annual rate of 7.9, while in Kansas it grew 2.3 percent. Income from manufacturing accounts for approximately 23 percent of total personal income for south central Kansas, and much of Kansas manufacturing is in the region. Forty-five percent of Kansas manufacturing income and over 35 percent of manufacturing employment are in south central Kansas.

Historically, manufacturing employment growth has led real economic activity by six months. This relationship is expected, since manufacturing employment contributes significantly to the economic base of south central Kansas. The six-month lag represents the amount of time required for the full impact of change in manufacturing income to ripple through the local economy.

We were apparently still in this lag period at the end of 1987. Since real retail sales, a consistently good indicator of local economic activity,[1] have not grown since 1985, we may assume that other forms of economic activity are not yet increasing. The Center for Economic Development and Business Research at Wichita State University collected the retail sales data for Figure 1. South central Kansas retail sales account for around 25 percent of this activity for Kansas.

Figure 1
South Central Kansas Retail Sales
(in billions of 1967 dollars)



Source: Center for Economic Development and Business Research, Barton School of Business Administration, Wichita State University.

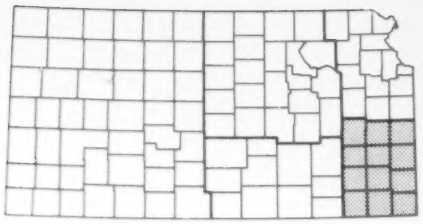
Taking account of recent national economic trends, manufacturing employment for south central Kansas is expected to grow during 1988. Wichita manufacturing employment grew at an annual rate of 7 percent during the third quarter of 1987, and we expect 1988 growth to be from 2.5 to 3 percent. Given the relationship between the manufacturing sector and economic activity, we expect moderate real economic growth during 1988 for the local economy.

The bottom line is that the south central Kansas economy should fare better than the national economy during 1988 due to the strength of the manufacturing sector.

Note

1. For further discussion see "Do Retail Sales Provide Information About the Local Area Economy? A Test of Sedgwick County," *Business and Economic Report*, 17:17-18 (September 1987).

Southeast Kansas



Richard K. Hay

Dr. Hay is executive director of the Institute for Economic Development, Pittsburg State University, Pittsburg, Kansas.

Before the recession of 1982 many people believed that southeastern Kansas was relatively recession-proof and that its economy would not follow national trends. Along with other Kansans, people from the southeast had a significant awakening in 1982 when they discovered their vulnerability to these national forces. Not only did the economy of southeastern Kansas suffer from the recession, in the following years it failed to rebound along with the nation. Only in 1987 has there been any evidence of an economic turnaround for the region, and this turnaround represents only a modest beginning.

Although southeast Kansas shares many economic characteristics with the entire state, it also has some unique attributes. Historically, southeast Kansas has depended upon the declining industries of mining and railroads. The shakeout in these industries has continued through 1986 and 1987, particularly in Parsons and Pittsburg. The region has attracted footloose, low technology, labor-intensive industries, which have picked up some of the slack from the declining major industries. Recently, existing industry expansion and new venture startups have been emphasized.

In addition, the southeast Kansas economy has suffered from a lack of regional infrastructure development. Although community infrastructure is generally quite good, the region has not been successful in developing adequate transportation networks, especially four-lane highways.

Employment

During 1987, for the first time in several years, total employment grew and the unemployment rate declined sharply in southeast Kansas. Although employment did not increase in every county, average growth was about 1 percent in southeast Kansas during 1987. The unemployment rate, averaging approximately 6.4 percent, dropped more than one percentage point from 1986. Some of this improvement was due to a decrease in the civilian labor force. Nevertheless, growth in total employment in the face of several plant closings was quite encouraging.

Generally, plant closings appear to be behind us now, and new business startups and business expansions should stimulate employment growth during 1988. The only black cloud on the employment horizon is the possibility of significant layoffs associated with the Missouri-Kansas-Texas Railroad in Parsons. Notwithstanding, total employment for the region should grow by 1.5 to 2 percent during 1988.

Building Permits

Encouraged by falling interest rates during the first part of the year, residential and commercial new construction increased significantly in 1987. The value of new housing starts increased by approximately 3 percent, and new commercial construction grew by nearly 9 percent. The value of total building permits increased by slightly more than 10 percent during 1987.

As with the rest of the region, the future of construction activity in southeast Kansas is heavily dependent upon interest rates. In light of the favorable outlook for employment and given relatively stable mortgage interest rates in 1988, construction should again increase significantly. We anticipate that during 1988 the value of building permits in the region will increase 15 to 20 percent with commercial construction again being significantly stronger than residential construction.

Retail Sales

Perhaps one of the most significant differences between the southeastern Kansas economy and the national economy has been the consumer. Nationally, the recovery from the 1982 recession was led by consumer spending. In southeast Kansas, however, retail sales have remained soft and the consumer has been a follower rather than a leader. This trend continued during 1987: Retail sales were the weakest spot in the region's economy, declining approximately 6 percent. National chains like Wal-Mart, however, have done well throughout the region. Services and soft goods were strong.

The overall improvement in the region's economy should help stabilize retail sales in 1988, when we expect southeast Kansas to move out of the minus column in retail sales growth. Once again most of this improvement will occur in the soft goods sector. We can look forward to perhaps a 1 to 2 percent increase in total retail sales during 1988.

New Car and Truck Sales

Sales of new automobiles were quite weak in southeast Kansas during 1987, depressing total retail sales. Sales declined in each county of southeastern Kansas, and for the entire region new car sales in 1987 declined by approximately 18 percent. New truck sales, while stronger than automobile sales, were also weak during 1987. Significant improvement in new car or truck sales during

1988 is not expected in the region since nationally auto sales are predicted to be weaker. Perhaps new car and truck sales in the region, which have declined for the past several years, will reach the bottom in 1988. We anticipate a 3 to 4 percent decline in new car sales and a 1 percent growth in new truck sales during 1988.

Summary

1987 was not a spectacular year for southeast Kansas, but it did represent an important turnaround. It was the first year of even modest economic improvement since the 1982 recession.

Although the prospects for 1988 are brighter than they have been in several years, the region continues to lag behind the state and the nation. Additional emphasis upon expanding existing industries, assisting startup ventures, forming local and regional pools of venture capital, and developing four-lane highways are the keys to igniting and sustaining future economic growth in the region.

From the Economic Outlook Conference

The Importance of Stable U.S. Prices

Wayne Angell

Wayne Angell is a governor of the Federal Reserve Board and a banker. Until he began his term on the Federal Reserve Board, he was a professor of economics at Ottawa University in Ottawa, Kansas. The following are excerpts from a transcript of Dr. Angell's presentation to the Economic Outlook Conference on October 9, 1987.

We live in a global economy and an economy that's in transition. Thus the opportunities that exist for the entrepreneur in Kansas are not so different from opportunities everywhere. But recently we priced ourselves out of world markets as the dollar exchange rate went up and up.

Exchange Rates and Lost Markets

I remember worrying in 1982 about the dollar exchange rate going higher. In December of 1982 I asked Chairman Volker, "Mr. Chairman, how important do you believe exchange rates are in establishing monetary policy?" At that time the exchange value of the dollar had risen from the level of about 80 on the Federal Reserve Index to 128. He leaned back in his chair, he put his cigar up in the air, he brought his hand down and said emphatically, "They are a lot more important than we've made them." The dollar continued to increase in exchange value until it peaked at 161 in February of 1985. It didn't take much insight to know that the U.S. economy could not prosper with the dollar valued so high on world markets.

Caterpillar is an example of this. Midwest industries like Caterpillar had a world market and a substantial market share. People around the world have Caterpillar tractors, they've got Caterpillar parts, they've got Caterpillar repair manuals, and they've got Caterpillar support. How long do you think it takes for them to change from buying Caterpillars? The dollar moved up so high that inevitably we did lose those markets. We will not win them back rapidly, but a return to the level of exchange rates that existed in 1980 will start the process.

Many people would prefer that we win those markets back by one form of protectionism or another. That is a formula for disaster for the world and for us. We are linked inevitably with the well-being of the world. Our comparative advantage in agriculture works well when the whole world prospers. The developing nations, with their millions of people, will buy more grain and more crops as soon as they have the income to do so.

The Goal of Stable Prices

Continued devaluation of the dollar would be one such form of protectionism. Exchange rate depreciation and its accompanying inflation cannot occur without rapid growth of the money stock. Indeed, the world's inflation is dependent upon what the Board of Governors of the

Many people would prefer that we win those markets back by one form of protectionism or another. That is a formula for disaster for the world and for us.

We should have only one priority: to be sure that the dollar's purchasing power is maintained over time.

Federal Reserve System do to maintain the purchasing power of the dollar. We should have only one priority: to be sure that the dollar's purchasing power is maintained over time. Allowing the dollar to depreciate now, when world commodity prices are increasing, would not result in any faster improvement in our balance of trade.

We are indeed in a major cycle correction. We succeeded in evading the deflationary forces of 1986, not through jaw boning, but through the Federal Reserve Board's monetary policy. We began in 1986 with a dollar whose exchange rate was out of line with world conditions, so we let the monetary aggregates grow at unusually high rates during the year. But in 1987, in response to a new round of inflation sentiment, the Federal Reserve has had to restrict money supply growth.

We have been successful. I'm amazed at how little credence monetarism has today. No one seems to recognize that M1, currency and demand deposits, will have grown only 3 percent in 1987, perhaps because we did not report M1 targets to Congress. While some people do not believe M1 is important, I follow it very carefully because it responds more quickly to changes in policy than the other monetary aggregates. As the Federal Reserve raises the discount rate, it most directly increases the opportunity cost of holding M1. It is true, however, that market forces have also increased the opportunity cost of holding money.

One reporter asked me whether money supply growth just accidentally slowed. I said, "Listen, anything that happens to the growth of money, we're responsible for." If the Federal Reserve lets interest rates slow the growth of the monetary aggregates, it's because we want slower growth.

Along with an increasing number of people, I believe in one priority for monitoring policy: stable prices. Money supply should be linked to a properly weighted market basket of commodities, and we ought to consider exchange rates in making monetary policy.

My service as a Federal Reserve Board governor will be unsatisfactory to me if by the time my term ends in 1994 the dollar's price level measure in an internationally weighted commodity basket is higher than 110 or is lower than 90. We just about got it below 90 in 1986, but we stopped it. We've now got it back above 100, but less than 110, and we're applying cool patient brakes.

There is only one inflation rate that I find palatable or desirable—the lower range is zero and the upper range is zero. But a static Consumer Price Index is not zero inflation. For example, because it is difficult to measure productivity in the service sector, economists who keep track of inflation measurements assume productivity to be zero in most cases. Yet consumers spend an ever-increasing portion of their household budgets on services, and the price of services has increased at 6 percent per year, which increases the consumer price index. Meanwhile, measured increases in manufacturing productivity have been about 3.2 percent year after year.

Medical costs are an example of increased productivity that appears as inflation. A Rotary Club from Pennsylvania visited me at the Board of Governors, and they were talking to me about medical costs. Most Rotarians are young people, but this group was not so young. I asked them, "Do you remember what it would cost to see a doctor in 1950?" They agreed quickly that it would cost eight dollars for a 15minute office call. I said, "What does it cost to see a doctor today?" They decided a 15-minute office visit would be $42. "If you had a pain you were worried about, would you go to a doctor with 1950 methods for eight dollars or a 1987 doctor for $42?" Everyone of them said, "I'll go pay the $42." Is their choice irrational? Of course not.

Outlook for the 1990s

Prospects for the United States are much better than most people will admit. The quantity of our real exports is now growing at a 15 percent annual rate, and it will continue to grow. Entrepreneurs and bankers here in Kansas who never thought of themselves as international will be involved in international trade. Growth of our real exports will be long lasting.

The present exchange value of the dollar gives Kansas farmers a comparative advantage again. There's a lot of new prosperity out there. Did you know that cash net farm income in 1986 was a record $49 billion? Net cash farm income in 1987 is going to exceed that record. The reason that we have such an improvement in net cash farm income is that expenses in farming fell 7 percent between 1985 and 1986. Our farms are leaner and meaner than any in the world. In Europe, they don't bother with market forces, so they avoid letting farmers fail. They subsidize more and more people in farming. Europe has eleven nonfarmers for every one farmer. In the United States, we have 50 nonfarmers for every farmer. In Indonesia, China, and India they have two-tenths of a non-farmer for every farmer. We have the advantage over European countries, which heavily subsidize troubled industries, because we occasionally let market forces work.

Some people get excited about things they need not worry about. They say, "Oh my goodness, isn't it bad that the U.S. savings rate is so low? Isn't that unfortunate?" It is not unfortunate at all. Any time the private sector makes decisions about saving or investing or consuming, it makes the best decision according to private sector interests. If

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Entrepreneurs and bankers here in Kansas who never thought of themselves as international will be involved in international trade. Growth of our real exports will be long lasting.

you believe we ought to dictate or guide these decisions, you are in the camp of the new mercantilists.

Mercantilists are everywhere. The secret of finding one is to ask, "Do you believe it's better to be a balance of trade surplus country or a balance of trade deficit country?" The person who believes it is better to be a balance of trade surplus country adheres to the primary driving force of mercantilism that says the state ought to intervene in economic affairs in order to cause a balance of trade surplus. There is nothing so dumb as to be a long term balance of trade surplus country. The trade surplus country works hard, produces lots of goods, and insists on selling them abroad. They collect dollars, and they never, never plan to spend them. A country that pursues such an activity over a long time will suffer from an appreciating exchange rate, which will result in a deflationary decline that will be absolutely devastating. It just doesn't make any sense to do that. It is like giving away the best you have.

Let me tell you how nice it is to be a balance of trade deficit country. You get to have more people employed every year because trade deficits only last so long. Our real exports will soon be growing faster than our real imports, and that means we will have more jobs, more production, and more wealth. Quite a few people say, "Oh my goodness, we've got to tighten our belts!" I never thought that we had to tighten our belts in our family when our income went up, our productivity went up, we decided to save more, and our wealth rose. That's not properly described as tightening your belt—that's the good day.

So, we have much to look forward to because we have good employment, we have good opportunities, and we have a Federal Reserve Board that is devoted to price level stability. The decade of the nineties will be our era.

High Quality: The Competitive Advantage

Dennis Karney

Dr. Karney is the current Eugene B. Hibbs Faculty Scholar and an associate professor of operations management in the K.U. School of Business. The following article is excerpted from his remarks at the Economic Outlook Conference held at the University of Kansas on October 9, 1987.

Introduction

Kansas business is competing in an increasingly international economy. During the past 15 years, world trade has increased sevenfold. The United States exports from 15 to 20 percent of production, and about 70 percent of U.S. production is competing with imports. Unfortunately, U.S. performance has been poor. In terms of international trade, Kansas is doing even worse than the nation, exporting a relatively small proportion of total Kansas production. Kansas firms that do export are concentrated in very few sectors.

International competition presents special difficulties for Kansas because of its geographic location, existing industrial structure, and education and cultural traditions, which often emphasize the local over the global.

Plans for improving the international competitive position of Kansas might have state-initiated components—mechanisms for technology development and transfer, new sources of capital, development of human resources, facilitation of international transactions, and improvement of the business climate. Yet the primary responsibility lies with the private sector, and the private sector's emphasis must be on delivering a *quality* product that meets the consumer's needs. During the past 15 years, the United States has been losing market share in steel, electronics, heavy construction equipment, the California automobile market in particular and the domestic automobile market in general, and even the Japanese paper diaper market, to name a few. In each case, a competitor, usually Japanese, offered a higher quality product/service, produced and delivered at a lower total cost to the firm. Note, the product was not always offered to the *customer* at a lower price. Sometimes the quality or even the perception of that quality was so much better that customers were willing to pay more. Recall for instance the premiums paid for Japanese cars by Americans in the early to mid-1980s.

Quality is Cheaper

If you are a traditionally trained American manager in either the public or private sector, you have to be wondering how it is possible to simultaneously achieve higher quality and lower cost. To

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Higher quality leads to lower costs through reductions in scrap, rework, and other wastes associated with not building the product right or not delivering the service right the first time.

explain this phenomenon in the successful Japanese firms, we usually conclude quickly that it is a result of some combination of cheaper labor, cultural homogeneity, international exchange rates, unfair business practices, and closed markets in Japan. Although it may be comforting to attribute Japanese successes to factors beyond the control of the individual firm, it is not accurate. Higher quality leads to lower costs through reductions in scrap, rework, and other wastes associated with not building the product right or not delivering the service right the first time. In fact, in American firms, the cost of poor quality can often run as high as 40 percent of the cost of goods sold.[1] In 1981, following an audit of operations, the executives of Hewlett Packard Corporation found that

> . . . 20 percent of revenues, 25 percent of assets, 25 percent of the people, 40 percent of the space and 70 percent of the inventory could be attributed to handling or coping with defective components and products.[2]

Unfortunately for American firms, since 1950 the Japanese have focused almost exclusively on the dual issues of what quality is and how it can be achieved. However, the Japanese have shown a willingness to share their successes and failures, in the spirit of their American teachers, W. Edwards Deming and J.M. Juran. With this experiential knowledge, American firms have a chance to catch up. That is not to imply that American firms can learn the lessons of 40 years overnight.

Ford Motor Company began studying and seriously implementing many of the Japanese management techniques to improve quality in the early 1980s. By the end of 1985, they had reduced their daily expenses by $12 million a day in comparison with 1981,[3] and by the end of 1986, Ford had become the most profitable car company in the world. Moreover, in the first half of 1987, despite a downturn in the total automobile market, Ford not only increased its market share by 10 percent to 20.1 percent of the market but also had higher profits than General Motors and Chrysler combined. Yet even with such success, Donald E. Petersen, Ford's chief executive notes, "There's so little to be complacent about."[4]

What then can we learn from both the successful Japanese and American firms about the secrets of consistently delivering higher quality? How can we come to enjoy the resulting benefits of lower costs and increased market share? There are four requirements for consistently delivering high quality, that is for consistently delivering the value your customer paid for.

Keys to Quality

The first key to delivering high quality is a customer focused orientation. "Customer" means not only the ultimate user of the good or service but also the workers in the process, who are actually customers of the work done prior to their contributions. Determine what these customers need, not what you would like to sell them. This could be as involved as it was in the design stage of the Ford Taurus. In that project, the design team with the help of select customers, assembly workers, and competitors, identified hundreds of characteristics of a car and determined the "best in the class" for most of these characteristics prior to designing the car. Designers then incorporated the best characteristics into the Taurus design, producing what many feel is a superior product line.

On the other hand, this can be as easy as having the worker who makes a given part talk to the worker who installs the part to see how the manufacturing of the part and its delivery can be fine-tuned to make the assembler's job easier. The Taurus product line illustrates what can happen when you listen to your various customers. The Edsel, or for the younger generation New Coke, illustrates what can happen when you don't.

The second key ingredient for delivering high quality is the development of human resources. Workers are assets, not liabilities. They have brains and specialized knowledge concerning their jobs. Use these to your advantage. As Irvine Hockaday, Jr., president and chief executive officer of Hallmark, observed

> . . . there are two qualities that enable companies to endure and be successful over time: commitment to excellence and . . . a commitment to brotherhood. Maybe it's more aptly put as recognition of the value of people to an organization.[5]

Rather than laying off people as a reward for productivity increases, free them to work on improvements without fear of job loss. Let them take pride in their work. Encourage them to contribute and grow. Realize that this will require leadership on your part instead of supervision.

The third requirement for delivering high quality is a systematic approach to the operation. The quality inherent in a product or service is determined by the materials, machinery, work methods, measurement tools, environment, and workers. Improvement in the quality of output will result from a continual systematic analysis of all these factors, not just from the workers trying harder and doing their best. Analyzing the operation requires many of the seven basic statistical tools: flow charts, correlations, Pareto charts, histograms, run charts, cause

The first key to delivering high quality is a customer focused orientation. Even your best customer will leave you if you fail to innovate as times change.

As we push forward with economic development in Kansas, we must remember that the issue is *not* whether Kansas business should compete in world markets: It has no choice but to do so.

and effect diagrams, and statistical process control. Using these tools, you will be able to first stabilize and then improve your system.

In one operation at Ford, namely the Monroe #1 Stabilizer Bar Line, the local work force used the statistical tools mentioned above to reduce downtime on the line from 23.3 percent to 0.9 percent in about nine months, reduce scrap due to seams 80 percent, extend cutting tool life 1,200 percent, from 50 bars per set of threads to 600 bars per set of threads. In addition, output per worker increased in 18 months from 45 bars per person to 278 per person, while increased demand required the plant to operate a second shift and create four new jobs.[6]

The final key to quality is the conscious realization of the long term as you make decisions. Since you are in business for the long term, start to think and act that way. Invest in training and education programs for your employees. Develop your employees to achieve their highest potential. In Japan managers may freely reallocate the resources in their budgets except that the allocation for training and education must not decrease. Invest in research and development. You need to anticipate your customers' future needs: Even your best customer will leave you if you fail to innovate as times change.

Finally, remember that the future is made up of consequences of the decisions you make today. Think through these implications before rather than after implementing decisions. For example, does it make sense to push for a just-in-time inventory system when your firm's physical plant was built primarily with rail docks rather than truck docks? If the nearby roads are inadequate?

Quality Services

Do not conclude that the high quality-low cost phenomenon exists only in manufacturing. It applies equally well to services, both public and private. In the early to mid-1980s, Nashua Corporation used these quality principles to reduce their overdue accounts receivable by millions of dollars. In fact, they determined that approximately 70 percent of the overdue accounts receivable resulted directly from problems internal to Nashua like improper billing, improper mailing, and incorrect currency. In the mid-1980s, both the city of Madison, Wisconsin, and the state of Wisconsin used this philosophy to decrease turn-around time in such areas as motor pool repairs and word processing in times of tight fiscal budgets. They *increased* their services in times of decreased revenues. Interestingly enough, higher quality in the public sector tends to reduce costs, resulting in either an increase in services, a decrease in the need for taxes, or both.

Conclusion

As we push forward with economic development in Kansas, we must remember that the issue is *not* whether Kansas business should compete in world markets: It has no choice but to do so. Rather, the key issue is How must Kansas businesses change in order to compete better in world markets? The key legislative issue is What can the state do to facilitate this change?

Certainly a crucial part of the answer to these questions is that we can make Kansas a total quality producer. Given proper guidance and training, existing firms have tremendous opportunities for competing better in world markets, and our higher education system is an excellent source of this kind of information. We can give Kansas business a competitive edge by emphasizing quality in public services, so that the choice for Kansans will be between increasing services without tax increases, and maintaining existing services with lower taxes.

For additional information, I suggest the following works: The classic Out of the Crisis, *by W. Edwards Deming and* Juran on Quality Planning, *by J.M. Juran; a case study,* The Deming Management Method, *by Mary Walton; and an introductory text,* Understanding Statistical Process Control, *by D.J. Wheeler and D.S. Chambers. For management development programs in this discipline, contact Deming through the Department of Continuing Education, Juran at The Juran Institute in Wilton, Connecticut, or the Management Development Office of the K.U. School of Business.*

Notes

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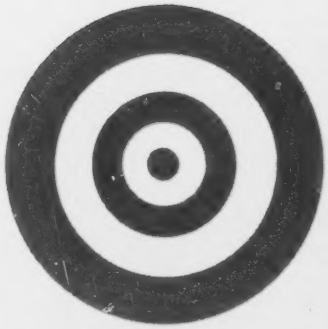
Given proper guidance and training, existing firms have tremendous opportunities for competing better in world markets . . .

Targeting New Interstate Trade: A Proposal for Reforming Kansas Development Tax Policy



David Burress

David Burress is an assistant professor in the economics department at the University of Kansas and a research associate at the Institute for Public Policy and Business Research.

Much debate about Kansas economic development policy has focused on tax incentives to attract new investment. Continued emphasis on this debate may be unwarranted, since evidence exists for two propositions:

1. State tax incentive schemes have little influence on new investment.

2. State development policy should focus on encouraging existing industry.

Yet most states have some form of development tax incentives, so Kansas legislators may not be free to abandon such programs. In this paper, I propose modifying two of Kansas's current economic development tax incentives: the Job Expansion and Investment Tax Credit (JE&I Tax Credit), and the local property tax abatement program. The new program could completely eliminate general fund taxes for the few firms that will contribute the most to Kansas's economic development, while reducing the amount of lost revenue.

Tax Policy and Economic Development

Economic development policy is not an end in itself, but only a means. The real end of state policy is to maintain and improve the well-being of the citizens now in the state. In this section, I will try to summarize some advice to state policymakers in that endeavor, drawing on theoretical and empirical work in economics.

Exports, Imports, and Development

Some kinds of economic development need no encouragement. When a community is prosperous, houses, shopping centers, and fast food shops multiply like rabbits. This kind of development occurs without government incentives; it arguably requires the opposite, government controls so as to prevent urban sprawl.

The underlying prosperity of a community is determined by a very different kind of development, which either expands the export base of sales to other communities or else creates a local substitute to replace previous imports from other communities.[1] Development of this kind is viewed by economists as more fundamental,[2] both because it determines the level of domestic activity, and also because it is harder to accomplish.

In particular fundamental activities, often designated as basic industries, exhibit such characteristics as economies of scale, economies of agglomeration, and specialized human and real capital, which is relatively immobile once it is created. These characteristics lead to a great deal of inertia in the location of an industry, once it gets started. At the same time, the initial location of a new industry can sometimes be almost random, although it is influenced by such cost factors as local resources and transportation distances, both from suppliers and to markets.

Or, to tell the same story in more concrete terms, think about the decisions that led Learjet to establish itself in Wichita. A single Learjet factory can supply the entire world demand (economies of scale). The factory could have been built almost anywhere, but Wichita offered an attractive combination of existing nearby suppliers (economies of agglomeration with other aircraft manufacturers) with a skilled and specialized work force (immobile human capital).[3] In other words, Lear went to Wichita because other aircraft companies were already there. But the aircraft industry itself got started in Wichita, back in the 1920s, as a result of Cessna, Beech, and other small entrepreneurs operating almost out of garages.[4]

When the community is relatively small, this story implies that import substitution occurs mainly among suppliers of intermediate products, inputs to further production. That is, basic industries are usually those with economies of scale, so that a single firm needs a large market. Export-base industries capture a large market by means of exports to a broader region. But by definition, import-substitution industries don't export; the only large markets available locally are apt to be in supplying the export-base industries.[5]

This story leads to several lessons for Kansas development policy with respect to tax incentives:

1) Policy should concentrate on expanding the export base, should encourage the import-substitution process, and should ignore nonbasic industries.

2) Old firms are very likely to stay in the same place, not only because their

The new program could completely eliminate general fund taxes for the few firms that will contribute the most to Kansas's economic development . . .

workers and suppliers are already in place, but also because the owners and managers have adjusted to their current location and are reluctant to move.[6] Certainly extremely large tax incentives might overcome these barriers to relocation, but the critical time for tax incentives is when a new firm is being established, not when an old firm is expanding. Consequently, if they are to be used at all, tax incentives should concentrate on the more cost-effective strategy of attracting new firms rather than on retaining old firms.

3) Because the import-substitution process is a rather special case, which is likely to be overlooked, it should receive special attention in development policy.

The Effectiveness of Tax Incentives in Development Strategy

Among all types of development policy instruments, tax incentives are the most widely used by state governments.[7] But there is a near-consensus among academic experts that tax incentives are of marginal usefulness, at best, for state development policy.[8] In particular, tax differences may have an effect on firm locations[9] over short distances, but the effects decline with distance. Some authorities would go even further and argue that tax incentives are actually counterproductive: forgone tax revenues may exceed the benefits to the state of the corresponding development.[10]

One can most easily understand these claims by appealing to the conventional theory that firms choose the lowest-cost location, so as to maximize profits. By examining the balance sheets of typical firms, one can establish that state and local taxes are usually less, sometimes much less, than 5 percent of the cost of production and delivery. In such a case, even if its taxes were completely eliminated, the state could not match a competitive location where other costs were only 6 percent lower. Conversely, if other costs were 6 percent higher in competing states, then it would be a waste of revenue to provide any tax incentives at all. Moreover, there is ample evidence that the major costs like labor, land, energy, and transportation to markets often do differ by more than 6 percent, even between neighboring states.[11] Table 1 shows some ratios of taxes to costs in Kansas.

An alternative theory of business location implies that firms respond less to actual costs than to the reputation or business climate of a state. Unfortunately, since reputation is closely related to actual conditions, it is very difficult to choose between the cost theory and the reputation theory on empirical grounds.[12] Since the reputation theory cannot be disproved, the following principle may be prudent.

4) Incentives should be highly visible and should be designed to have a large effect on the national image of the Kansas business climate.

At the same time, there is significant empirical evidence for a third theory: firm locations respond not only to the relative cost of production, but also to amenities, cost of living, income taxes, and other factors that affect the standard of living of top managers.[13] This implies not only that tax incentives to firms may be less important than the minimum cost theory assumes, but also that tax cuts may be counterproductive if they lead to a reduction in publicly provided amenities.

Revenue Needs

For this and other reasons, an adequate revenue base is important to any state development strategy. Tax revenues pay for amenities (parks, roads, schools, public safety) used by the households of businessmen and women. More importantly, revenues are needed to pay for infrastructure and other public inputs to production: roads used by trucks, skilled and productive labor educated in the public schools and universities, police pro-

Table 1
Kansas State and Local Taxes as Percent of Production Costs

Selected Kansas Industries by S.I.C. Code	Taxes as a Percent of Production Costs		
	State	Local	State and Local
201: Meat Products	0.47	0.28	0.76
204: Grain Mill Products	1.85	0.82	2.67
307: Misc. Plastic Products	1.30	1.13	2.42
344: Fabricated Structural Metal	0.66	0.68	1.34
353: Construction Machinery	1.02	1.24	2.27
367: Electronic Components	1.11	1.62	2.72
371: Motor Vehicles, Equipment	0.66	0.55	1.20
481: Telecommunications	0.86	4.82	5.68
737: Data Proc., Computer Services	4.44	0.42	4.87

Note: State taxes include Kansas corporate income taxes, Kansas franchise taxes, and state sales taxes on business expenditures (estimated using rate of 4 percent). Local taxes include local sales taxes on business expenditures (estimated using rate of 1 percent) and property taxes. Production costs include labor costs (including all labor taxes), materials costs, interest payments, depreciation, and rental payments.

Source: Constructed by Patricia Oslund. Full description of method and sources in Oslund (1987).

. . . Lear went to Wichita because other aircraft companies were already there.

tection and public utilities used by businesses, court systems to settle business disputes. In other words, providing public services can lower the cost of production and attract firms.

By heavily taxing consumers and workers, it may be possible to attract firms with a combination of excellent public services and low taxes on businesses and managers. At the extreme, however, this strategy is likely to be defeated in the political marketplace by the majority of voters who consume and work. No development policy is likely to persist unless a majority of the voters can be convinced they stand to benefit. These considerations imply some additional lessons for tax policy:

5) The revenue cost of tax incentives should be minimized. At the same time, in order to attract investment, the value of the incentives to the firm should be substantial. This requires careful targeting. In particular, and in addition to targeting fundamental industries, tax incentives should be targeted to new investment that would not otherwise occur.

Interstate Tax Competition

An apparent paradox was implied by the earlier discussion: state tax incentives appear to be ineffective, but they are used universally. Are state legislators either ill-advised or under the influence of narrow probusiness forces in the state bureaucracy or in the private sector? There is good evidence against both conclusions.[14] The tax incentive race continues because of two interlocking factors:

1. We can't absolutely prove that differences in tax policy don't matter to development. Since legislators aren't sure and are averse to putting state economic development at risk, they adopt a rational defensive strategy.
2. All states are engaged in the tax incentives race, so business tax policies are very similar across states. Since all tax policies are similar, there is no way to prove that differences in tax policies matter.

A way out of this vicious cycle has recently been recommended by the Committee for Economic Development.[15] They argue that states in each region should enter into compacts so as to "end the arms race" by agreeing to limit tax competition. Federal legislation could accomplish the same purpose. This suggests another lesson:

6) The governments of the different states should coordinate their tax incentive policies so as to maximize their common interests.[16]

Tax Competition Between Communities in the Same State

Local governments carry out a parallel, but more severe, competition. Many firms are able to negotiate a local property tax reduction by threatening to move to an adjacent community. The negotiations are unequal because local communities have little knowledge or expertise about the actual intentions of firms.[17] Often, the firm is not able to leave the state. In these cases, tax incentives serve no statewide development purpose, and they expend scarce revenues uselessly. Moreover, the advantage a tax break gives a firm in one community may help it drive an older, nearby establishment out of business.

7) Incentives should not be granted if they are adverse to existing interests in the state. For example, incentives should not create a competitive disadvantage for existing firms in the state. Incentives should not be used to encourage firms to move from one locality to another within the state.

Tax Incentives as Zoning and Other Side Effects

Tax incentives have been sold to the voters as development tools. They have often been used by local governments to accomplish a different purpose: controlling urban sprawl by encouraging retailers to move from the periphery to the decaying central cities. In other words, they are being used as aids to zoning. In my view, this use is unnecessary.[18]

At the same time, it would be perverse to grant tax incentives to development where the local community opposes it. For example, highly polluting industry may be undesirable in Johnson county.

8) Incentives should not be used to attract undesirable industry, or to encourage desirable industry to choose an undesirable location. Local government should have a strong voice in the definition of which industries and locations are desirable. At the same time, tax incentives should not be wasted in an effort to attract domestic activities back downtown.

It is clear that many of these goals stand in conflict with each other. In any real policy, some tradeoffs must be made. I turn now to an examination of the tradeoffs currently being made by Kansas tax incentives.

Kansas Development Tax Policy

Reversing a century of laissez-faire policy, Kansas state government began to move toward an activist development policy in the 1960s and 1970s.[19] In the initial stages of the debate, the Legislature tended to view tax incentives as the main policy tool available for encouraging state development. This view led to the adoption of the Job Expansion and Investment Tax Credit (JE&I Tax Credit) in 1976. The JE&I Tax Credit provided credits

. . . state and local taxes are usualiy less, sometimes much less, than 5 percent of the cost of production and delivery.

against the Corporation Income Tax for manufacturing investment and job creation, with substantially larger credits for investment occurring in defined Enterprise Zones. A second program, adopted in 1963, provided for optional local property tax abatements linked to Industrial Revenue Bonds.

The general terms of the policy debate were later influenced by the Redwood-Krider report of 1986.[20] Taxation issues received a relatively small amount of attention in the report. In this and other respects, the policy criteria assumed by the report were generally consistent with the criteria discussed above. The report recommended that

> the state should not adopt a strategy for development based on tax incentives, but rather should have a tax structure that is consistent with that of competing states with regard to business taxes. A strategy based on tax incentives is expensive and there is no evidence it would work. . . .

The report did recommend additional reductions in Kansas business taxes. These taxation changes were not intended to lead the development effort, but merely to make Kansas roughly competitive with nearby states. The recommendations included a sales tax exemption for manufacturing equipment and business computers; a corporate income tax credit for research and development; an income tax credit for venture capital investment; elimination of the property tax on inventories; and a local option for property tax abatements on a range of industries. All of these proposals were adopted by the Legislature,[21] except the machinery and equipment exemption, which remains under consideration.[22]

The property tax abatement program replaced the earlier abatement program linked to Industrial Revenue Bonds, now being restricted as a result of federal tax law changes. As I will show, the abatements are more substantial in their ultimate revenue impact than the JE&I Tax Credit. They also seem to go beyond the goal of merely meeting the average level of competition in nearby states. The replacement for IRB-linked property tax abatements was intended to assist border communities competing with Missouri, which offers business low taxes and few services; but Missouri has no abatement program of equal magnitude.

In subsequent testimony before legislative committees, Redwood, Krider, and other staff from the Institute for Public Policy and Business Research made two additional recommendations. First, they criticized the JE&I Tax Credit on various grounds, and proposed trading it in an approximately revenue-neutral fashion for the statewide machinery and equipment exemption. Second, they criticized some of the uses being made of local property tax abatements, and proposed statewide restrictions on them. At this writing, neither of their recommendations had been adopted. My criticisms and proposals concerning these two programs, given below, are somewhat different than theirs.

Estimates of Lost Revenue

Next I will focus on the revenue impact of the JE&I Tax Credit and property tax abatements. Shirley Sicilian has already reported some estimates of the revenue cost to the state for the JE&I Tax Credit.[23] Kansas City, Kansas, estimated the revenue cost of its property tax abatement program for new investment after its first year.[24] Table 2 reports the revenue impacts of new credits granted in a one-year period in comparable terms.[25]

The JE&I Tax Credit appears to be relatively small compared to the state budget, amounting to about 0.2 percent of general fund revenues. The Kansas City, Kansas, property tax abatement is much more significant, amounting in its initial year to some 4 percent of property taxes raised in the city by all government units. After four years of the program, nearly 25 percent of the Kansas City, Kansas, tax base had been at least partly exempted; as a result, tax rates on the remaining properties were the highest in Kansas.[26] Wichita has also pursued an aggressive and *de facto* unrestricted abatement program.[27] Statewide figures are not available, but property tax abatements may substantially reduce the tax base of local communities.

Criticism of Existing Kansas Tax Incentives

Apart from their revenue cost, these two programs are inefficient. In particular, most of the beneficiary firms are likely to have invested even without the incentives. Most significantly, neither program distinguishes between new and expanding firms. As the data in Table 3 indicate, about 80 percent of investment in Kansas manufacturing occurs in existing firms; this investment receives tax subsidies that are probably unnecessary. In Kansas City, Kansas, Viscek estimated that 62 percent of projects were already in the planning stage when information on the tax abatements became available to firms.[28] In Wichita, of five companies that requested abatements on November 17, 1987, four did so retroactively.[29] Furthermore, the programs extend credits

Table 2
Estimated Lost Revenue From Two Kansas Tax Incentives

	Investment Year	Revenue Cost	Borne By
Sicilian's estimate:			
Job Expansion and Investment Tax Credit	1985	$4,079,000	State
Kansas City, Kansas, estimate:			
Tax abatement for new investment	1984	$2,949,000*	KCK**

* converted to present value terms by the author
** includes all units of government

Source: Sicilian (1987); Viscek (1986). See also footnote 25.

Table 3
An Indicator of Target Efficiency for Job Expansion and Investment Credits

Ratio of Investment in New Establishments to Investment in Expansions for Manufacturing Industries in Kansas

Year	Investment in New Establishments $ million	Investment in Expansion $ million	Ratio New/Expanding
1976	79.4	124.8	.64
1977	45.1	254.9	.18
1978	59.2	210.1	.28
1979	55.2	298.1	.19
1980	237.7	440.0	.54
1981	77.1	611.9	.17
1982	50.6	108.0	.47
1983	82.4	245.6	.34
1984	122.7	335.5	.37
1985	57.6	1312.9	.04
1986	86.1	130.0	.66
Average 1980-1986	95.5	370.2	.26

Source: Constructed from Kansas Department of Commerce, *Kansas New and Expanding Manufacturers, 1986.*

to several manufacturing activities that neither export nor substitute for imports: newspapers, bakeries, dairies, and local machine shops.

The JE&I Tax Credit is likely to be ineffective for another reason. The credits provided under the program are so tiny in relation to production costs that any noticeable effect on firm locations is implausible. The usual annual credits amount to only $350 per new job, and $350 per $100 thousand in investment.

At the same time, target coverage is incomplete. Both programs are restricted to manufacturing and research, and therefore omit some important parts of the Kansas export base. For example, interstate wholesalers, corporate headquarters, business services selling out of state, software firms, and long distance telecommunications firms would not be eligible for the tax credit.[30] The programs make no special effort to target import-substitution industries.

The current programs sometimes subsidize new competitors of existing Kansas firms, while raising taxes on the old firms. As a result of the Kansas City, Kansas, abatements, Sealright Company threatened to move 400 employees out of the city, and U-Stash-It went out of business.[31]

Both programs seem to be used partly as reverse zoning devices. The full effect of the JE&I Tax Credit is only in Enterprise Zones. These zones are intended to be areas of local blight, but the zones can be defined by local authorities in an arbitrary manner. Wichita city administrators recently proposed to use the old Industrial Revenue Bond abatement program to help Brick's, a retail clothing store, stay in the downtown area.[32]

Both programs can be used in competitive efforts to shuffle industry around within Kansas. For example, Wichita, Augusta, and Emporia recently engaged in a bidding war, offering tax abatement and other incentives so as to capture Silk Scapes, a Wichita firm of only 50-odd employees.[33]

Reforming Kansas Tax Incentives

The key idea behind my proposal is to provide very large tax credits for new establishments, based on audited records of shipments out of the state. Incentives would be removed for the expansion of existing establishments. Details of my proposal follow.[34]

Repeal of Existing Incentives

The Kansas Job Expansion and Investment Tax credit would be replaced. The existing authority of local governments to provide property tax abatements would be restricted to targeted establishments.

New Tax Credits

Substantial credits against the corporate income tax, franchise tax, and sales tax on business purchases should be issued to targeted establishments, in fixed amounts per year for a limited time period (say ten years) after the credits are granted.[35] In some cases the credits would be reduced by a percentage, as described below.

Export-Base Targeting

To receive tax credits, a new export-base establishment would have to pass these hurdles:

- Kansas communities and existing firms must have an opportunity to file objections if they would be competitively disadvantaged by tax incentives offered to new firms.

- Kansas state government would have to certify that the planned investment did not compete substantially with existing Kansas investment; that the ap-

The key idea behind my proposal is to provide very large tax credits for new establishments, based on audited records of shipments out of the state.

plicant firm did not presently produce goods for the intended market within Kansas; and that providing tax credits would be in the interest of Kansas.

- County and municipal government must certify that the planned investment would be in the local interest.

- Annual returns by the establishment must show that at least 90 percent of output from the establishment was shipped or sold for ultimate use out of state. If less than 90 percent was shipped out of state, then the credits should be reduced in proportion.

Other Targeting

Variations on the above procedures could be designed to handle import substitution, corporate headquarters, and other special cases:

- Corporate headquarters could be presumed to allocate management services to the corporation based on the same three-factor allocation formula used in the Kansas corporation tax. This eliminates the need to audit "shipments" out of state.

- Investment in import substitutes could be identified by means of an initial study, showing that the planned market is currently being supplied from mainly out-of-state sources. Annual returns should document that the establishment is actually selling to the identified import-substitution market.

- A similar procedure could apply for products that are part of the export base and also substitute for imports. This would simplify record keeping and avoid a reduction in credits when some sales are inside Kansas.

Estimates of Benefits to Firms

The new program could be designed to hold revenue costs constant at the state level. Using data from the Kansas Department of Commerce, I estimate that my targeting procedures would narrow the amount of eligible investment by a factor of at least five. Table 3 shows that new firms receive about a fourth of the investment of old firms, or about one-fifth the total investment. Therefore the JE&I Tax Credit could be at least five times as large for the targeted firms. If so, the state general fund taxes could be completely eliminated for a majority of targeted firms. For hypothetical firms, Table 4 shows the ratio of credits under the existing law and credits to eliminate all general revenue fund taxes.

In the case of Kansas City, Kansas, property tax abatements are already very generous. Restricting these abatements to targeted firms would free enough revenue to completely eliminate taxes on targeted firms for ten years (about twice the present benefit) and yet reduce the revenue cost of the program by more than half.

Table 4
Credits Necessary to Eliminate General Fund Taxes

Hypothetical Kansas Firms from Selected SIC Codes	Credits Under Existing Law	Credits to Eliminate Tax	Ratio
201: Meat Products	$ 7,877	$17,732	2.25
204: Grain Mill Products	$13,433	$71,890	5.35
344: Fab. Structural Metal	$ 6,526	$ 8,666	1.33
367: Electronic Components	$11,227	$14,680	1.31
371: Motor Vehicles, Parts	$13,997	$31,122	2.22

Note: Credits are calculated for hypothetical new Kansas firms as in Oslund (1987), using 1985 data. The existing credits assume that rates applicable to Enterprise Zones apply: $350 per new employee, $350 per $100,000 investment, and elimination of sales taxes on plant and equipment. The credits to eliminate taxes exactly offset general fund obligations.

Source: Constructed by Patricia Oslund. Method and sources described in Oslund (1987).

Advantages of the Proposal

1. The proposal delivers a large fraction of the maximum possible tax reduction for targeted firms. For many new firms, state and local general fund taxes would be completely eliminated for a ten-year period. For these firms, in present value terms the proposal provides 68 percent of the benefit that would be provided by a complete elimination of general fund taxes.[36]

2. The proposal is innovative and would get some free publicity that would improve Kansas's business reputation. The paid advertisements might claim: Come to Kansas and pay no taxes!

3. For the targeted firms, taxes in Kansas would usually be much lower than taxes in Missouri or Nebraska, our lowest taxed nearby competitors.

4. The proposal accomplishes its development goals with substantially more clarity than the existing tax incentives. In particular, it provides a direct way of measuring which firms should be targeted rather than relying on SIC codes.

5. The proposal is revenue-neutral at the state level, and revenue-enhancing at the local level. Shifting from one scheme to the other would increase tax revenues from existing firms, while at the same time increasing incentives for new firms.

6. Consequently, this proposal might be used as a wedge to get rid of some unwise tax gimmicks in the present Kansas tax code and to help head off the new gimmicks that may be demanded. It creates a strong presumption that no new development tax incentives are needed.

Kansas communities and existing firms must have an opportunity to file objections if they would be competitively disadvantaged by tax incentives offered to new firms.

The proposal is innovative and would get some free publicity that would improve Kansas's business reputation.

7. If existing tax gimmicks are removed, then Kansas will stop encouraging firms to move from one location to another within Kansas and reduce the pressure on localities to grant tax breaks they can ill afford.

Disadvantages of this Proposal (and Other Tax Incentives)

1. The proposal will tend to increase interstate tax competition. If it is effective, it will eventually be adopted by surrounding states. Thus, it provides only a temporary advantage to Kansas. Improvements in Kansas's reputation for business climate, however, might be more long-lasting.

2. As in any tax incentive program, much of the tax benefit will be wasted on firms that would have located in Kansas even without the benefits.

3. Some firms attracted into Kansas by the tax credits may move out again after ten years when the credits evaporate.

4. Since state taxes are a small factor in location decisions, the number of firms attracted by this or any other tax proposal is likely to be small.

5. Kansas localities will continue to feel competitive pressures to provide unnecessary tax abatements for some targeted firms.

6. The proposal does not address the problem of potential runaway firms presently in Kansas: Existing firms may continue to be tempted to move out of Kansas by tax incentives and other benefits in other states.

7. Consequently, there may be a temptation to extend the program to cover existing Kansas firms. The revenue costs of such an extension could be great. Moreover, the advantages to the state of such an extension would be both slight and unmeasurable.

8. This (and any other) form of targeting state policy on export-base firms and new investment is inherently unfair to firms that don't qualify.

9. Administrative costs and compliance costs might be relatively high per firm. On the other hand, relatively few firms will qualify for the tax incentives.

10. It is nearly impossible to measure the true effects of the incentives on location decisions of firms. Therefore the program cannot be accurately evaluated in the future.

Conclusions

I have proposed a method for nearly eliminating state and local taxes on targeted new firms in Kansas. The method does not reduce state or local revenues. Rather it targets nearly all firms Kansas should target, and ignores nearly all firms Kansas should ignore. Kansas should adopt it.

But first, there are political obstacles to overcome. Firms now situated in Enterprise Zones want the JE&I Tax Credit available for their future investment. Local communities do not want to surrender control of tax abatements to state government. Since restrictions on tax abatements benefit local rather than state revenues, the legislature has little incentive to act. Also, questions of constitutionality might be raised.[37]

Perhaps the proposal will seem more attractive after Kansas communities have had some more bad experiences with cutthroat tax abatements. In the meantime, inaction may not be a bad policy. That is, the nature of my argument has been rather hostile to tax incentives. I have shown that compared with my proposal, existing tax incentives are ineffective. I then argued that even the benefits of my alternative proposal may be slight. Indeed, the main benefit would be to control tax-base erosion, so that local communities can provide the services which economic development requires.

The author received very substantial assistance from Pat Oslund and helpful comments from Charles Krider. The opinions expressed here are the author's own, and do not represent a position of the Institute for Public Policy and Business Research.

Notes

1. Note that I am using "export" and "import" to include trade with other communities and other states, not just trade with other countries. This is a conventional usage in discussions of economic development.

2. The export-base theory has been discussed or at least assumed in several previous articles in the *Kansas Business Review*, including Albrecht et al. (1985), McLean (1984), Redwood and Krider (1986). The import-substitution process has received less attention here, but is well known in the economic development literature; for example, see Bagchi (1982, pp. 126-143), Kindleberger and Herrick (1977, pp. 268-291).

3. Lear himself tells the same story in different terms, informing his biographer that a Wichita location promised a lower expected cost of production than any other location in the world. See Rashke (1985, p. 223). For a general discussion of industrial location in the aircraft industry, see Todd and Simpson (1986, Chapter 5).

4. The availability of risk capital from Jake Moellendick, an Oklahoma oilman, was also important. A brief history of the origins of the aircraft industry in Wichita is given in Miller and Skaggs (1978, pp. 12-16).

5. For evidence that the opportunities for import substitution in Kansas are small, see McLean (1984).

6. Many studies have found that the decision to expand is very different from the initial location or relocation decision. For example, McLean (1983) found that the top two factors influencing expansion in Kansas were right to work laws and the cost of moving; the top two factors influencing new firms to locate in Kansas were the state's location and personal opinion of Kansas. In a study of new and expanding Tennessee firms, Hake, Ploch, and Fox (1985) found that the top two factors in a decision to expand an existing site were the ability to complement existing facilities and right to work laws; the top two factors influencing new enterprises were access to markets and low labor influence.

7. Ledebur (1986) and Eisinger (1986) report that all states have passed at least some forms of special tax treatments apparently related to development goals. Industrial Revenue Bonds were by far the most common.

8. Recent reviews of the empirical literature arguing that state taxes have little effect on firm location include Rubin and Zorn (1985), Seidman (1987), and Kieschnick (1987). On the other hand, a literature review by the James Papke (1986, p. 35) concluded that taxes are an important factor, but just how important has not yet been satisfactorily determined, and Blair and Premus (1987) argue that taxes have recently grown relatively more important. For a discussion of the effect of federal taxes on firm location in Kansas, see Oslund (1987a).

9. Some politicians have argued that tax incentives do not merely move firms from one location to another; they also encourage new firms and investment to come into existence. I know of no published statement by an economist that supports this supply-side claim for taxes at the state level. A review by Chirinko (1986) concluded that the empirical evidence has not yet shown that taxes affect total U.S. investment.

10. For example, Ledebur (1987). An empirical study by Leslie Papke (1986, p. 41) suggests that the effects of taxes on firm location are too small to compensate states for lost revenues. For a discussion of the costs and benefits of tax incentives in Kansas, see Sicilian (1987).

11. Rubin and Zorn (1983) give interstate cost comparisons.

12. Erickson (1987) reviews business climate research.

13. See the review articles cited in footnotes 8 and 9 for evidence that quality of life affects firm location.

14. Grady's 1987 empirical study examines the causes of the interstate tax competition.

15. Quoted from the Committee for Economic Development (1986).

16. Some economists have argued that interregional tax competition can in some cases promote a generalized efficiency; see Gerber and Hewitt (1987). But even if this is true, state governments can still do more for the interests of their own citizens by coordinating rather than by competing. (In the same sense, establishing a monopoly does more for the interests of an industry than does submitting to free competition.) Also, there may be considerations of equity which countervail against the argument for interregional competition.

17. Ledebur (1986) discusses local tax concessions.

18. Arguably, local communities in Kansas may be unable to rely on zoning laws alone, and need additional planning tools. This issue requires a separate consideration on its merits.

19. The *Kansas Economic Development Study* implied that the shift to activism in Kansas resulted from the long Kansas recession after 1979. However, the shift occurred at the same time with, and was part of, a nation-wide sea change in state economic policies (See Eisinger [1986]).

20. Redwood and Krider (1986).

21. In the cases of local property tax abatements and inventory taxes, constitutional amendments were also required.

22. A sales tax exemption for machinery and equipment already existed within Enterprise Zones under the JEI Tax Credit.

23. Sicilian (1987). Her study relied on data from the Kansas Department of Revenue.

24. Viscek (1985). The Kansas City, Kansas, estimates refer to a program originally authorized under the Kansas Payment in Lieu of Taxes program, in conjunction with Industrial Revenue Bonds.

25. In both cases, I ignore any lost or gained revenue from new firms attracted by the incentives; that is, I assume zero response rate to the incentives. In each case, the estimate refers to total future lost revenues for new investment occurring in approximately a one year period. The lost revenue is reported in present value terms, using a 10 percent discount rate.

26. See the *Wichita Eagle-Beacon* (1987).

27. Figures from Shepherd and Farnsworth (1987a).

28. Reported in Viscek (1986, pg. 5). Furthermore, in a later survey by Shepherd and Farnsworth (1987a), more than three-quarters of businesses said that the tax gifts were unnecessary.

29. Reported in *The Wichita Business Journal* (1987).

30. Recent literature has increasingly recognized the role of nonmanufacturing activities in the export base (Gillis 1987). At the time of this writing, the Kansas Legislative Joint Committee on Economic Development was considering a bill to correct the target coverage problem for the JEI Tax Credit (but not for local property tax abatements).

31. Reported in Shepherd and Farnsworth (1987b) and Davis (1987).

32. Reported in Hernandez (1987).

33. Reported in Rubin (1987).

34. For brevity, I have avoided discussion of some issues which would need to be faced in a real proposal. Among these are the following:

First, as is usual in tax reforms, a grandfather clause should be written. That is, credits already certified to existing firms would not be affected. These existing credits are designed to evaporate over a ten year period.

Second, in location decisions of firms, timeliness is important. This implies that a speeded up approval procedure would be needed, perhaps one granting only a preliminary approval, conditional on a later showing that all conditions are met.

Third, in the provision for targeting import-substitution firms, the concept of a "good not currently produced in Kansas" is rather slippery. By their nature, each brand or model of each manufactured good differs in some respects from all other goods. In practice, defining this concept may rest heavily on the pragmatic test of whether any existing Kansas firms register objections.

35. Fuel taxes and payroll taxes would not be covered. These taxes are more closely related to services received by the firm than are the listed general fund taxes.

36. This assumes a 10 percent discount rate.

37. The proposal is at least arguably constitutional. The Kansas constitutional amendment authorizing local property tax abatements specifically provides that the legislature may restrict its use. For a discussion of the Kansas constitutionality of the earlier Industrial Revenue Bond-tax abatement program, see Buser (1976). Court action against state taxes based on the federal interstate commerce clause has generally restrained excessive taxes on interstate commerce, not the failure to tax; see Hellerstein (1986).

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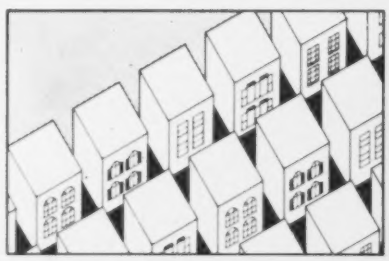
Of Special Interest to the Small Business Owner and Operator . . .*



Kansas Small Business Growth: 1974-1984

Frank Sotrines
Robert J. McElroy
John Moyer

Dr. Sotrines is director of the Small Business Development Center at Washburn, and Robert McElroy is assistant director. John Moyer was a research assistant at the Center at the time of the study.

We began this study in January 1987 to determine the status of small business in Kansas. We defined small business as profit-seeking business establishments with 500 or fewer employees. This definition included more than 99 percent of Kansas establishments.

The U.S. Bureau of Census *County Business Patterns* offered the most comprehensive data, and the last year available was 1984. We considered ten years to be the minimum for examining historical data. The ten-year average annual change was calculated using percent changes for 1974 through 1984.

This analysis shows that the number of small businesses increased more slowly in Kansas than in the U.S., the difference averaging 0.6 percent per year. In terms of employees, the difference between the

* This article is sponsored by the U.S. Small Business Association and the Kansas Small Business Development Centers.

U.S. and Kansas ten-year average growth rates was less than 0.1 percent. And in terms of payroll growth, Kansas outperformed the United States by 0.3 percent per year. None of these differences between the United States and Kansas were large enough to be statistically significant.

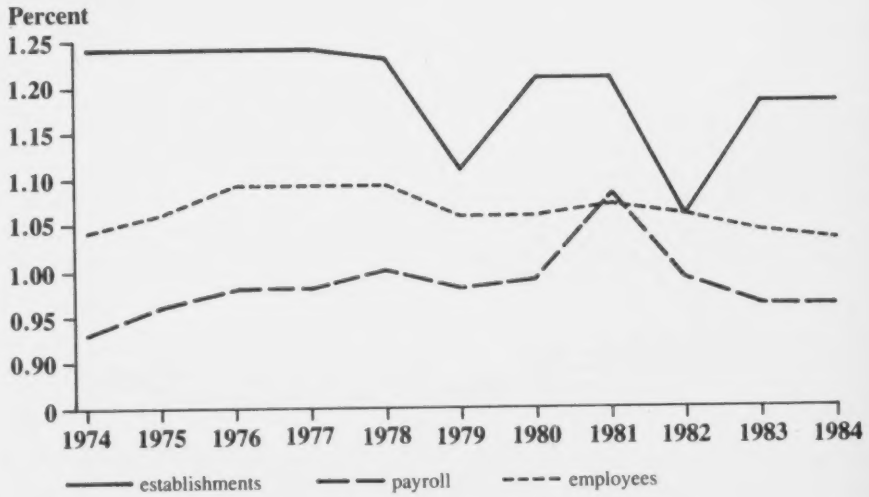
During the study period, Kansas small business did consistently better than small business in Missouri or Nebraska, but the statistics also show that the Kansas economy did not perform as well as Colorado and Oklahoma. Perhaps due to high oil prices, these states both outpaced the national averages in growth in establishments, employees, and payrolls.

Number of Small Businesses

Kansas increased the total number of small business establishments from 50,747 in 1974 to 64,947 in 1984—a net increase of 14,200 establishments in ten years. The ten-year low in total small business establishments was in 1974, and the high was in 1984. Figure 1 illustrates that Kansas small business establishments as a percentage of U.S. small business establishments declined slightly during the ten-year period.

As Table 1 shows, on average the number of small businesses grew in the United States and the five midwestern states between 1974 and 1984. Kansas lagged the nation 0.62 percent a year. Based on the small number of observations, we cannot establish that this difference was other than random. Kansas's performance was poorer than Colorado's and Oklahoma's, but slightly better than Missouri's and Nebraska's. It was noteworthy that both Colorado and Oklahoma also out-paced the United States. The number of small businesses in Kansas and in the United States dropped once during the period: In 1980 Kansas lost 0.6 percent and the United States lost 8.8 percent. Colorado was the only state in the Midwest Region where the number of small businesses grew every year. Missouri and Nebraska each had net losses of small businesses in 1980, 1981, and 1982.

Figure 1
Small Business, Kansas as a Percent of U.S.
1974-1984



Source: U.S. Bureau of the Census, *County Business Patterns*, 1974-1984.

Table 1
Average Annual Percent Growth in Small Business
1975 to 1984

	Establishments	Employees	Payroll
Kansas	2.57	2.59	10.13
U.S.	3.19	2.68	9.82
Colorado	5.31	4.74	13.77
Oklahoma	3.80	3.49	11.93
Missouri	2.13	1.85	8.71
Nebraska	2.18	1.41	8.24

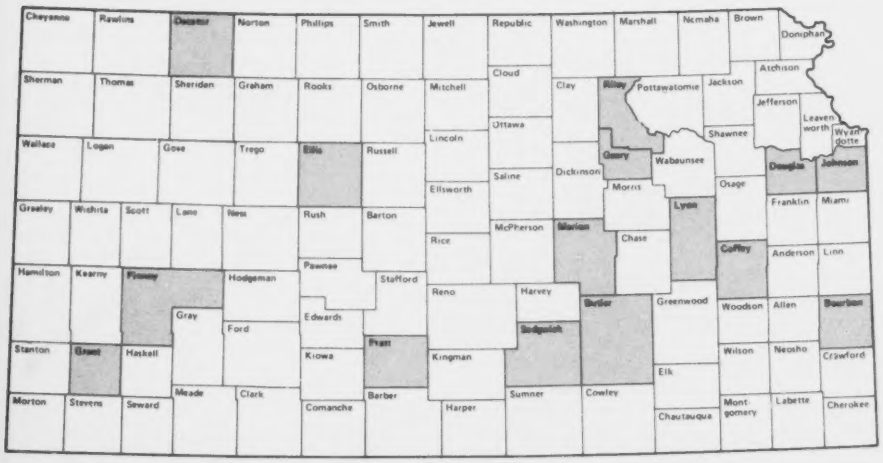
Source: U.S. Bureau of the Census, *County Business Patterns*, 1974 through 1984.

As one might expect, the number of small businesses grew in relatively few counties. Figure 2 shows there were only 15 counties whose average annual growth rates were equal to or greater than the Kansas average, and most of these counties were in the eastern half of the state. Note that these top performing counties include cities and towns like Overland Park, Fort Scott, Kansas City, Lawrence, Manhattan, Hays, Garden City, Pratt, Emporia, Wichita, and El Dorado. Even more interesting is that these counties contain community colleges or universities.

On average, 15 counties had net losses

Kansas small business did consistently better than small business in Missouri or Nebraska, but the statistics also show that the Kansas economy did not perform as well as Colorado and Oklahoma.

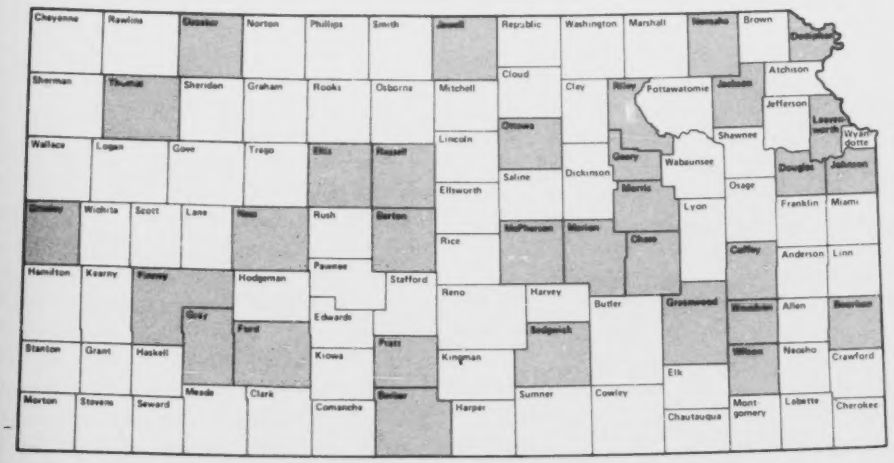
Figure 2
Small Business Growth, 1974-1984
15 Counties Outpaced the State*



* Shading indicates counties where the ten-year average annual growth rate was higher than the state rate of 2.57 percent.

Source: U.S. Bureau of the Census, *County Business Patterns*, 1974-1984.

Figure 3
Small Business Employment Growth, 1974-1984
32 Counties Outpaced the State*



* Shading indicates counties where the ten-year average annual growth rate was higher than the state rate of 2.59 percent.

Source: U.S. Bureau of the Census, *County Business Patterns*, 1974-1984.

of small businesses for the period: Jewell, Pawnee, Sheridan, Pottawatomie, Rawlins, Cloud, Chase, Republic, Kiowa, Wichita, Wallace, Hamilton, Hodgeman, and Ottawa. Ottawa County suffered the highest percent loss over the period, averaging 1.78 percent of its establishments. In absolute terms, Ottawa County lost 147 small businesses in 1974 and 119 in 1984. Most of the counties that suffered net losses of small business establishments were in the western half of the state.

These statistics seem to confirm the realities of a declining rural economy. Kansans created new establishments in the face of these rural realities, but new businesses were primarily in the urban areas.

Employment Growth

Kansas increased the total number of small business employees from 499,556 in 1974 to 640,796 in 1984. This represented a net increase of 141,240 employees in ten years. The smallest increase was in 1975 (493,126) and the largest was in 1984.

As Figure 1 shows, Kansas small business employees as a percentage of U.S. small business employees peaked at 1.09 percent in 1976, 1977, and 1978 and then declined slightly, reaching the ten-year low of 1.03 percent in 1984.

Table 1 contrasts Kansas's ten-year average annual growth rate in employees in small business establishments with the rates for the United States, Colorado, Oklahoma, Missouri, and Nebraska. Averages were positive for the United States and the five midwestern states for the ten-year period. Kansas lagged behind the nation, Oklahoma, and Colorado, but did slightly better than Missouri or Nebraska. It is worth noting that both Colorado and Oklahoma again out-paced the U.S. ten-year average annual growth rate. The nation and all five states suffered net losses of small business employees in 1975 and 1983, and in 1982 Kansas, Nebraska, and Missouri had net losses.

Again, not all areas of Kansas performed as well as the state. Figure 3 shows that most of the state's small business employment growth was in a third of the counties. There were 32 counties that

averaged equal or higher rates than the state: Coffey County, in southeastern Kansas, ranked first with a 7.25 percent average annual growth rate. Small business employment grew from 820 employees in 1974 to 1,538 in 1984, most likely due to construction of the Wolf Creek Power Plant in the county during those years.

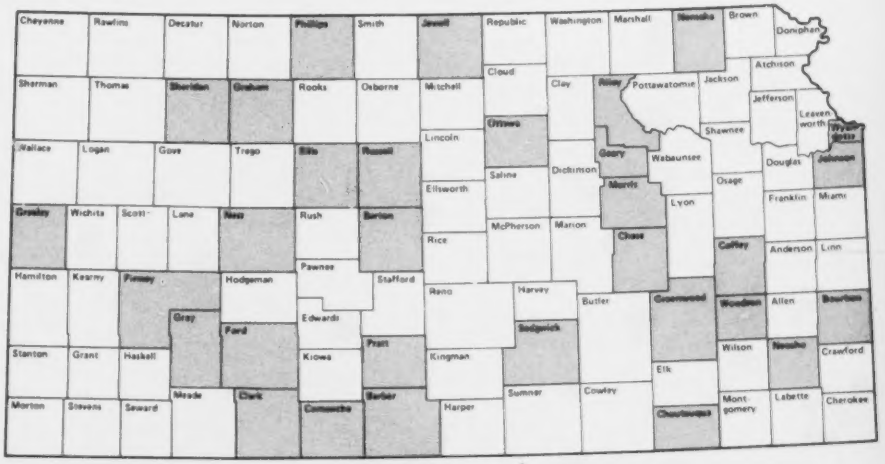
Of the three major urban centers only Sedgwick-Wichita outperformed the state average, and 25 counties outperformed Sedgwick County. Furthermore, Shawnee County failed to match the state average annual growth in establishments and in employees. Lyon, Butler, and Grant counties outperformed the state in terms of small business establishment growth but failed to match the state average growth in small business employees.

Wichita County had the worst ten-year average annual loss rate in small business employees (−8.89 percent). This represented, in absolute numbers, a change from 1,562 employees in 1974 to 418 in 1984.

Seven counties averaged losses in both small business establishments and employment: Pottawatomie, Cloud, Rawlins, Kiowa, Pawnee, Hodgeman, and Wichita.

The statistics on employment growth rates in small business establishments portrayed a healthier economy than the establishment figures did. On average, the Kansas small business employment growth rate nearly equaled the U.S. rate. The growth rates were shared by many the counties and not confined to urban areas, but the worst performers were rural counties located for the most part in western Kansas.

Figure 4
Small Business Payroll Growth, 1974-1984
31 Counties Outpaced the State*



* Shading indicates counties where the ten-year average annual growth rate was higher than the state rate of 10.13 percent.

Source: U.S. Bureau of the Census, *County Business Patterns*, 1974-1984.

Small Business Payroll Growth

Kansas small business payroll increased from $3,725,950,000 in 1974 to $9,723,059,000 in 1984, a net change of $5,997,109,000 in ten years. In current dollars, the ten-year low was in 1974, the high in 1984.

Small business payroll for Kansas as a percentage of U.S. small business payroll increased slightly during the period, from 0.93 in 1974 to 0.96 percent in 1984. At its highest in 1978, Kansas small business payroll was 1 percent of U.S.

During this ten-year period, small business payroll grew in the United States and in the five midwestern states. Kansas's ten-year average growth rate, 10.13 percent, was slightly better than the U.S. rate of 9.82 percent. Again, based on the number of observations this slight difference was not statistically significant. Kansas's largest payroll increase was in 1978 and its smallest was in 1983. Kansas again lagged behind Colorado and Oklahoma but bettered Missouri and Nebraska. Along with Colorado and Oklahoma, Kansas out-paced the U.S. ten-year average annual growth rate in small business payroll. During the period, payroll declined only in Colorado and Oklahoma, in 1979 for the former and 1983 for the latter.

Figure 4 shows that most of Kansas's payroll growth was in a third of the counties. In 31 counties average annual growth rates equaled or surpassed the Kansas ten-year average. This confirms some of the findings in the preceding section. However, there was a geographic shift of the best-performing counties. Over half of the 31 counties that bettered the state in small business payroll growth were in the western half of Kansas, and fully three-quarters were south and west of Salina.

Conclusion

Most Kansas firms are small businesses, and their welfare is closely tied to the well-being of all Kansans. Our analysis shows that growth rates in the number of small business establishments and in small business payroll and employment were close to national rates between 1974 and 1984. In fact, statistically the variation between national figures and Kansas figures in those years could have been random. Regionally, Kansas growth rates were slower than Oklahoma's and Colorado's and faster than Missouri's and Nebraska's. In the next issue of the *Kansas Business Review*, we will examine growth rates for the nine major industries in Kansas, the region, and the nation.

Comments

Odd to be in the position of writing a letter to the editor, but I feel some response is appropriate to the several recent articles analyzing and extending our "Brain Drain" project.

I appreciate and have read with interest the work that David Burress and others are doing in exploring the other side of the problem. Net migration is, of course, the best way to look at the problem where hard data on in-migration are available.

However, his most recent conclusion (". . . it is a problem Kansas has managed to live with for some 50 years, perhaps longer") may unfortunately invite some people to dismiss the outflow, whatever its dimensions, as of no real consequence.

If Kansas were sailing along economically, socially, and in all other ways, then one could take the position he adopts in his conclusion.

Clearly, we aren't. One must assume that the brain drain—whatever its net rate—has helped to bring the state into its present difficult situation. If that's not a valid assumption, then the very premise of education is destroyed.

If the issue had been identified and addressed 50 years ago, Kansas might be a very different, and better, place today. But is was not. To take the position that identifying the problem now is of no real significance because it had not been identified 50 years ago is akin in philosophy, though not in degree, to dismissing the discovery of penicillin because the world had survived so long without it.

Our study did indeed deal only with gross out-migration. We did not have the resources to track in-migration and chose not to try to estimate. From a human if not a statistical point of view, the loss of any talented person should be a point of concern and, more importantly, action to try to keep that person.

I would not argue against extension and refinement of our gross figures. But to conclude that the outflow borders on irrelevancy because it has been going on for 50 years is not likely to encourage a vigorous attack on the problem.

Davis Merritt, Jr.
Executive Editor
Wichita Eagle-Beacon

David Burress replies:

Mr. Merritt's comments lead me to regret that my "Brain Drain" articles were written too much in the scholarly mode ("Nothing but the facts, madam") and too little in the mode of personal opinion. I certainly would have expressed my substantial admiration for the *Eagle-Beacon* study of Merit Scholars, which was massive and well conducted. The study carefully disclosed its own limitations, sparked a useful policy debate, and made my study possible. Perhaps I should also have divulged my own preferences, which parallel Mr. Merritt's; that is, I would like to see the state take a much more active role in economic development, not only to stem the brain drain, but more importantly so as to improve the lives of those who have no opportunities elsewhere. (I implied this, to some extent, in the sentence prior to that quoted by Mr. Merritt, by stating that the brain drain is a real problem.)

At the same time, my main job as a researcher is to give the citizens of Kansas the best facts and analysis I can and then let them make up their own minds. I hope that the state will take action, not based on the unrealistic view that we have a sudden crisis, but rather based on the realistic view that we are engaged in a long-term struggle.

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_____ Cherokee	_____ Ford	_____ Kearny	_____ Morton	_____ Rush	_____ Washington
_____ Cheyenne	_____ Franklin	_____ Kingman	_____ Nemaha	_____ Russell	_____ Wichita
_____ Clark	_____ Geary	_____ Kiowa	_____ Neosho	_____ Saline	_____ Wilson
_____ Clay	_____ Gove	_____ Labette	_____ Ness	_____ Scott	_____ Woodson
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Economic Indicators

TABLE ONE: ECONOMIC INDICATORS

Comparison Indicators	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Annual rates, SA						
Kansas - Mil. $	2nd	37458.00	37241.00	36211.00	0.58	3.44
United States - Bil.$	3rd	3756.70	3708.57	3553.57	1.30	5.72
B. Employment						
Kansas - Thou., NSA	3rd	1192.13	1208.53	1177.10	-1.36	1.28
United States - Mil., SA	3rd	112.86	112.18	109.98	0.61	2.62
C. Unemployment Rate						
Kansas - % NSA	3rd	4.2	4.5	5.3		
United States - % SA	3rd	6.0	6.1	6.9		
D. Retail Sales - Annual rates						
Kansas - Mil. $, NSA	SEP	1410.00	1410.00	1746.67	0.00	-19.27
United States - Bil. $, SA	SEP	127.56	128.93	129.10	-1.07	-1.20
E. Consumer Price Index-U, All items, SA						
Kansas City* - 1967 = 100	JAN-JUN	331.10	324.00	321.50	2.19	2.99
United States - 1967 = 100	SEP	343.20	342.60	329.40	0.18	4.19
Kansas Indicators						
F. New Incorporations, NSA						
For Profit - Number	3rd	364.67	302.67	326.33	20.48	11.75
G. Tax Revenue, NSA						
General Fund Tax Revenue - Mil. $	3rd	147.93	163.90	132.63	-9.74	11.54
H. Operating Expenditures, NSA						
General Fund Operating Expenditures - Mil. $	3rd	105.63	128.00	101.57	-17.47	4.00

NOTES: *The Kansas City CPI-U is published semi-annually with the first period being January through June average and the second period being July through December average.
National employment and unemployment rate figures are based on the Current Population Survey (household survey).
State figures are based on the Current Employment Statistics Survey (establishment survey).
NSA-Not seasonally adjusted.
SA-seasonally adjusted.

SOURCE: BEA, BLS, Ks. Dept. of Human Resources, Ks. Secretary of State, Ks. Dept. of Administration, Ks. Dept. of Revenue.

TABLE TWO: NATIONAL INDICATORS
(Seasonally Adjusted)

General Indicators	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Income Measures, Annual rates						
Gross National Product - Bil. 82$	3rd	3833.40	3795.30	3718.00	1.00	3.10
Disposable Personal Income - Bil. 82$	3rd	2671.60	2645.43	2653.23	0.99	0.69
Personal Consumption - Bil. 82$	3rd	2517.20	2487.50	2477.50	1.19	1.60
Gross Private Investment - Bil. 82$	3rd	682.00	673.70	645.00	1.23	5.74
Net Export of Goods and Services - Bil. 82$	3rd	-134.90	-132.70	-161.60		
Government Purchases - Bil. 82$	3rd	769.10	766.70	757.20	0.31	1.57
Savings Rate - %	3rd	3.00	3.30	3.83		
B. Labor Force						
Civilian Labor Force - Mil.	SEP	119.86	120.30	118.27	-0.37	1.34
Employed - Mil.	SEP	112.77	113.08	109.99	-0.27	2.53
Unemployed - Mil.	SEP	7.09	7.22	8.29	-1.83	-14.44
Unemployment Rates - percent						
All -	SEP	5.90	6.00	7.00		
Women -	SEP	5.10	5.10	6.00		
Men -	SEP	5.90	6.00	7.00		
Teens -	SEP	16.30	16.00	18.50		
Blacks and other than white -	SEP	10.80	11.30	13.10		
Whites -	SEP	5.10	5.10	6.00		
C. General Business						
Industrial Production - 1977 = 100	1st	130.83	128.23	124.73	2.03	4.89
Mfg. and Trade Sales - Bil. 82$	1st	437.15	434.17	433.20	0.69	0.91
Mfg. and Trade Inventories - Bil. 82$	1st	657.57	655.13	646.71	0.37	1.68
New Orders, Durable Goods - Bil. 82$	1st	98.22	98.88	92.68	-0.67	5.98
Capacity Utilization, Mfg. %	1st	81.40	80.50	79.50		
New Housing Starts, Private - Tho.	1st	1610.33	1611.67	1758.33	-0.08	-8.42
D. Prices						
Consumer Prices - 1967 = 100						
CPI-U, All Items	SEP	343.20	342.60	329.40	0.18	4.19
Food	SEP	335.60	333.90	323.90	0.51	3.61
Housing	SEP	373.10	373.10	361.80	0.00	3.12
Apparel	SEP	218.30	216.00	208.90	1.06	4.50
Transportation	SEP	320.50	320.00	302.20	0.16	6.06
Medical	SEP	468.60	466.30	440.60	0.49	6.35
Producer Prices - 1967 = 100 (NSA)						
All Commodities	SEP	310.40	310.50	297.50	-0.03	4.34
Industrial Commodities	SEP	323.30	323.80	308.70	-0.15	4.73
Crude Materials	SEP	305.40	307.70	275.40	-0.75	10.89
Capital Equipment	SEP	311.00	312.10	303.90	-0.35	2.34
Agricultural Prices - 1977 = 100						
Prices Received	SEP	129.00	127.00	122.00	1.57	5.74
Prices Paid	SEP	164.00	164.00	159.00	0.00	3.14
E. Monetary and Credit Aggregates*						
Total Reserves -	3rd	-1.60	8.00	21.00		
M1	3rd	-0.10	6.40	16.50		
Commercial Banks:						
Savings -	3rd	7.80	24.10	25.00		
Small Denomination Time -	3rd	7.90	-4.60	-7.50		
Large Denomination Time -	3rd	4.40	18.30	-7.50		
Thrift Institutions:						
Savings -	3rd	7.30	25.90	21.00		
Large Denomination Time -	3rd	10.40	-8.40	2.80		
Debt Components:						
Federal -	3rd	5.90	8.80	14.70		
Nonfederal -	3rd	7.60	8.10	11.90		
Interest Rates - Monthly						
Prime Rate - %	SEP	8.70	8.25	7.50		
Discount Rate - %	SEP	5.95	5.50	5.50		

SOURCES: BEA, BLS, Survey of Current Business, Federal Reserve Bulletin.
* (Annual rates of change, seasonally adjusted in percent.)

TABLE THREE: QUARTERLY EMPLOYMENT IN KANSAS

	1987 Q3	1987 Q2	1986 Q3	% Change From 1987 Q2	% Change From 1986 Q3
A. General Indicators					
Civilian Labor Force - Tho.	1244.67	1265.37	1242.53	-1.64	0.17
Employed - Tho.	1192.13	1208.53	1177.10	-1.36	1.28
Farm Employment - Tho.	72.50	67.77	74.17	6.98	-2.25
Unemployed Tho.	52.50	56.83	65.43	-7.62	-19.77
Initial Claims for Unemployment Insurance - Tho.	9.72	12.29	13.16	-20.93	-26.18
Average Work Week, Mfg. - Hrs.	40.53	40.93	40.17	-0.98	0.91
B. Industry Employment, in thousands					
All Industries -	994.70	998.80	990.30	-0.41	0.44
Manufacturing -	179.93	178.53	175.33	0.78	2.62
Durable Goods -	106.53	105.63	104.70	0.85	1.75
Fabricated Metal Production -	11.77	11.47	11.87	2.62	-0.84
Machinery (incl. Elec.) -	28.13	27.80	25.97	1.20	8.34
Transport. Equip. -	47.57	47.63	45.30	-0.14	5.00
Nondurable Goods -	73.40	72.90	70.63	0.69	3.92
Food and Kindred Prod. -	28.47	28.10	26.57	1.30	7.15
Meat Products -	14.43	14.37	13.00	0.46	11.03
Printing and Publishing -	18.17	18.43	17.57	-1.45	3.42
Petroleum and Coal -	2.97	2.93	3.03	1.14	-2.20
Mining -	12.27	11.73	11.33	4.55	8.24
Oil and Gas Extraction -	10.77	10.27	9.67	4.87	11.38
Contract Construction -	46.27	43.03	47.40	7.51	-2.39
Trans. and Public Utilities -	63.20	63.00	64.30	0.32	-1.71
Wholesale Trade -	66.93	66.00	66.23	1.41	1.06
Retail Trade -	185.43	183.53	184.83	1.04	0.32
Finance, Ins., and Real Estate -	56.00	55.57	55.07	0.78	1.69
Services	200.07	198.83	195.93	0.62	2.11
Federal Government -	27.63	27.90	28.43	-0.96	-2.81
State and Local Government -	156.97	170.67	161.43	-8.03	-2.77

SOURCES: BLS, Ks. Dept. of Human Resources.

TABLE FOUR: QUARTERLY KANSAS RETAIL SALES SUBJECT TO SALES TAX

	1987 Q3	1987 Q2	1986 Q3	% Change From 1987 Q2	% Change From 1986 Q3
Sales - Mil. $					
Apparel -	35.52	37.96	31.06	-6.43	14.38
Automotive -	287.38	270.07	238.57	6.41	20.46
Food -	339.19	351.65	304.03	-3.54	11.57
Furniture -	70.57	70.23	59.94	0.48	17.74
General Merchandise -	213.57	229.59	171.02	-6.98	24.88
Lumber and Building Materials -	116.67	109.89	97.47	6.17	19.69
Prof. and Pers. Service -	80.46	78.57	64.87	2.41	24.04
Public Utilities -	71.21	63.89	63.65	11.46	11.88
Unclassified -	124.90	133.14	100.88	-6.19	23.81
Farm and Garden Products -	1.38	1.31	1.17	5.58	18.13
Manufacturing and Trading -	86.15	83.48	72.15	3.20	19.40
Miscellaneous -	3.44	7.25	3.92	-52.59	-12.33
Total -	1430.43	1427.23	1208.43	0.22	18.37

NOTE: Retail sales figures are based on sales tax collections. Actual and reported retail sales may vary.

SOURCES: Ks. Dept. of Revenue.

TABLE FIVE: QUARTERLY PERSONAL INCOME IN KANSAS*

	1987 Q2	1987 Q1	1986 Q2	% Change From 1987 Q1	% Change From 1986 Q2
A. Personal Income					
Total - Mil. $	37458	37241	36211	0.58	3.44
Nonfarm Income - Mil. $	35690	35298	34300	1.11	4.05
Farm Income - Mil. $	1768	1943	1911	-9.01	-7.48
Average Weekly Earnings, Mfg.** - $	406.59	409.86	388.47	-0.80	4.67
B. Earnings by Industry, in Millions					
Nonfarm -	24351	24053	23281	1.24	4.60
Farm -	1768	1943	1911	-9.01	-7.48
Manufacturing -	4821	4763	4735	1.22	1.82
Durable Goods -	2962	2935	2940	0.92	0.75
Nondurable Goods -	1858	1828	1794	1.64	3.57
Mining -	367	352	397	4.26	-7.56
Contract Construction -	1601	1655	1543	-3.26	3.76
Trans. and Public Utilities -	2130	2102	2090	1.33	1.91
Wholesale Trade -	1781	1768	1732	0.74	2.83
Retail Trade -	2452	2426	2365	1.07	3.68
Finance, Ins., and Real Estate -	1562	1529	1360	2.16	14.85
Services -	5050	4958	4740	1.86	6.54
Federal Government -	726	726	706	0.00	2.83
State and Local Government -	3115	3029	2889	2.84	7.82

NOTE: **Not seasonally adjusted.
*Seasonally adjusted, at annual rates

SOURCES: BEA, Ks. Dept. of Human Resources.

TABLE SIX: MONTHLY KANSAS AGRICULTURAL INDICATORS

	1987 September	1987 August	1986 September	% Change From 1987 August	% Change From 1986 September
Prices Received					
All Farm Products - 1977 = 100	147	146	135	0.68	8.89
All Crops - 1977 = 100	98	96	90	2.08	8.89
Wheat - $/Bu.	2.39	2.26	2.14	5.75	11.68
Sorghum Grain - $/Bu.	2.37	2.50	2.28	-5.20	3.95
Corn - $/Bu.	1.56	1.54	1.52	1.30	2.63
Soybeans - $/Bu.	4.87	5.03	4.6	-3.18	5.87
All Hay - $/Ton	51.00	55.00	42.00	-7.27	21.43
Livestock and Products - 1977 = 100	178	176	162	1.14	9.88
All Beef Cattle - $/Cwt.	66.20	65.10	58.70	1.69	12.78
Steers and Heifers - $/Cwt.	67.30	66.10	59.60	1.82	12.92
Calves - $/Cwt.	87.00	84.60	65.60	2.84	32.62
Hogs - $/Cwt.	52.80	56.60	56.70	-6.71	-6.88
Milk - $/Cwt.	12.50	12.00	13.10	4.17	-4.58

SOURCE: Ks. Crop and Livestock Reporting Service.

NOTE: *Not seasonally adjusted.

TABLE SEVEN: QUARTERLY EMPLOYMENT AND SALES FOR SMSAs AND COUNTIES

Area	1987 Q3	1987 Q2	1986 Q3	% Change From 1987 Q2	% Change From 1986 Q3
A. Wichita SMSA					
Civilian Labor Force - Tho.	233.07	233.67	225.30	-0.26	3.45
Employed - Tho.	223.07	222.77	211.63	0.13	5.40
Unemployed - Tho.	10.00	10.90	13.63	-8.26	-26.65
Rate - %	4.30	4.67	6.03		
Retail Sales - Mil. $	277.31	242.79	234.67	14.22	18.17
B. Kansas Portion of Kansas City SMSA					
Civilian Labor Force - Tho.	300.60	304.07	302.10	-1.14	-0.50
Employed - Tho.	287.30	290.87	290.57	-1.23	-1.12
Unemployed - Tho.	13.30	13.20	11.53	0.76	15.32
Rate - %	4.40	4.33	3.83		
Retail Sales - Mil. $	339.18	290.06	276.54	16.93	22.65
C. Topeka SMSA					
Civilian Labor Force - Tho.	88.40	89.27	87.13	-0.97	1.45
Employed - Tho.	84.70	85.67	82.87	-1.13	2.21
Unemployed - Tho.	3.70	3.23	4.27	14.43	-13.28
Rate - %	4.20	4.00	4.90		
Retail Sales - Mil. $	103.81	89.62	88.36	15.83	17.48
D. Lawrence SMSA					
Civilian Labor Force - Tho.	37.77	38.80	37.10	-2.66	1.80
Employed - Tho.	36.43	37.47	35.70	-2.76	2.05
Unemployed - Tho.	1.33	1.33	1.43	0.00	-6.98
Rate - %	3.50	3.47	3.80		
Retail Sales - Mil. $	36.26	29.48	29.58	23.01	22.60
E. Riley County--Manhattan Area					
Civilian Labor Force - Tho.	26.57	27.57	26.17	-3.63	1.53
Employed - Tho.	25.73	26.70	25.37	-3.62	1.45
Unemployed - Tho.	0.83	0.87	0.80	-3.85	4.17
Rate - %	3.07	3.17	3.07		
Retail Sales - Mil. $	17.87	15.36	16.54	16.35	8.01
F. Reno County--Hutchinson Area					
Civilian Labor Force - Tho.	31.80	32.03	32.33	-0.73	-1.65
Employed - Tho.	30.13	30.13	29.77	0.00	1.23
Unemployed - Tho.	1.67	1.93	2.53	-13.79	-34.21
Rate - %	5.27	6.00	7.83		
Retail Sales - Mil. $	31.61	28.55	29.21	10.71	8.22
G. Crawford County--Pittsburg Area					
Civilian Labor Force - Tho.	16.83	17.17	16.73	-1.94	0.60
Employed - Tho.	15.97	16.27	15.63	-1.84	2.13
Unemployed - Tho.	0.90	0.93	1.10	-3.57	-18.18
Rate - %	5.20	5.37	6.57		
Retail Sales - Mil. $	14.87	12.97	11.87	14.72	25.35
H. Lyon County--Emporia Area					
Civilian Labor Force - Tho.	18.37	19.13	19.03	-4.01	-3.50
Employed - Tho.	17.67	18.40	17.97	-3.99	-1.67
Unemployed - Tho.	0.70	0.73	1.03	-4.55	-32.26
Rate - %	3.70	3.83	5.57		
Retail Sales - Mil. $	16.46	14.71	14.52	11.89	13.35
I. Saline County--Salina Area					
Civilian Labor Force - Tho.	26.73	27.33	26.03	-2.20	2.69
Employed - Tho.	25.50	25.83	24.50	-1.29	4.08
Unemployed - Tho.	1.23	1.53	1.53	-19.57	-19.57
Rate - %	4.63	5.57	5.87		
Retail Sales - Mil. $	33.09	28.52	28.53	16.02	15.96
J. Barton County--Great Bend Area					
Civilian Labor Force - Tho.	15.80	16.23	17.57	-2.67	-10.06
Employed - Tho.	14.93	15.03	15.60	-0.67	-4.27
Unemployed - Tho.	0.83	1.20	1.97	-30.56	-57.63
Rate - %	5.30	7.20	11.03		
Retail Sales - Mil. $	18.83	15.36	16.01	22.59	17.63
K. Montgomery County--Coffeyville Area					
Civilian Labor Force - Tho.	17.67	18.13	17.33	-2.57	1.92
Employed - Tho.	16.70	17.07	16.00	-2.15	4.37
Unemployed - Tho.	0.93	1.07	1.33	-12.50	-30.00
Rate - %	5.30	5.97	7.70		
Retail Sales - Mil. $	17.05	15.55	14.75	9.63	15.55

SOURCE: Ks. Dept. of Human Resources, Ks. Dept. of Revenue.

TABLE EIGHT: QUARTERLY BANKING ACTIVITY IN KANSAS*

	1987 Q3	1987 Q2	1986 Q3	% Change From 1987 Q2	% Change From 1986 Q3
Federal Reserve Member Banks					
Kansas - Mil. $					
Total Deposits -	33922.3	33155.0	31496.7	2.31	7.70
Total Checkable -	6056.7	5994.7	5566.8	1.03	8.80
Demand Deposits -	3095.7	3082.7	3038.9	0.42	1.87
Other Checkable -	2961.0	2912.0	2527.3	1.68	17.16
Small Time and Savings -	23075.0	22688.3	21653.0	1.70	6.57
Large Time -	4790.7	4472.0	4282.5	7.13	11.87
Kansas City, KS - Mil. $					
Total Loans -	1701.77	1643.37	1392.22	3.55	22.23
Real Estate -	850.23	803.43	613.50	5.83	38.59
Commercial and Industrial -	522.77	502.87	416.73	3.96	25.45
Consumer -	106.40	105.53	127.63	0.82	-16.63
Total Deposits -	1846.67	1785.53	1621.78	3.42	13.87
Demand Deposits -	246.43	236.23	224.16	4.32	9.94
Time and Savings -	997.70	985.87	933.63	1.20	6.86
Topeka - Mil. $					
Total Loans -	322.97	322.00	332.84	0.30	-2.97
Real Estate -	102.87	100.43	85.20	2.42	20.74
Commercial and Industrial -	109.10	111.37	126.62	-2.04	-13.84
Consumer -	48.43	47.82	51.75	1.28	-6.41
Total Deposits -	510.93	521.87	520.67	-2.10	-1.87
Demand Deposits -	158.70	165.67	154.15	-4.21	2.95
Time and Savings -	223.53	225.60	242.62	-0.92	-7.87
Wichita Mil. $					
Total Loans -	1236.23	1247.73	1192.56	-0.92	3.66
Real Estate -	253.13	229.83	200.32	10.14	26.36
Commercial and Industrial -	470.93	511.20	509.28	-7.88	-7.53
Consumer -	360.30	350.57	323.39	2.78	11.41
Total Deposits -	1864.33	1822.03	1806.07	2.32	3.23
Demand Deposits -	460.47	462.87	445.89	-0.52	3.27
Time and Savings -	916.97	903.83	864.34	1.45	6.09

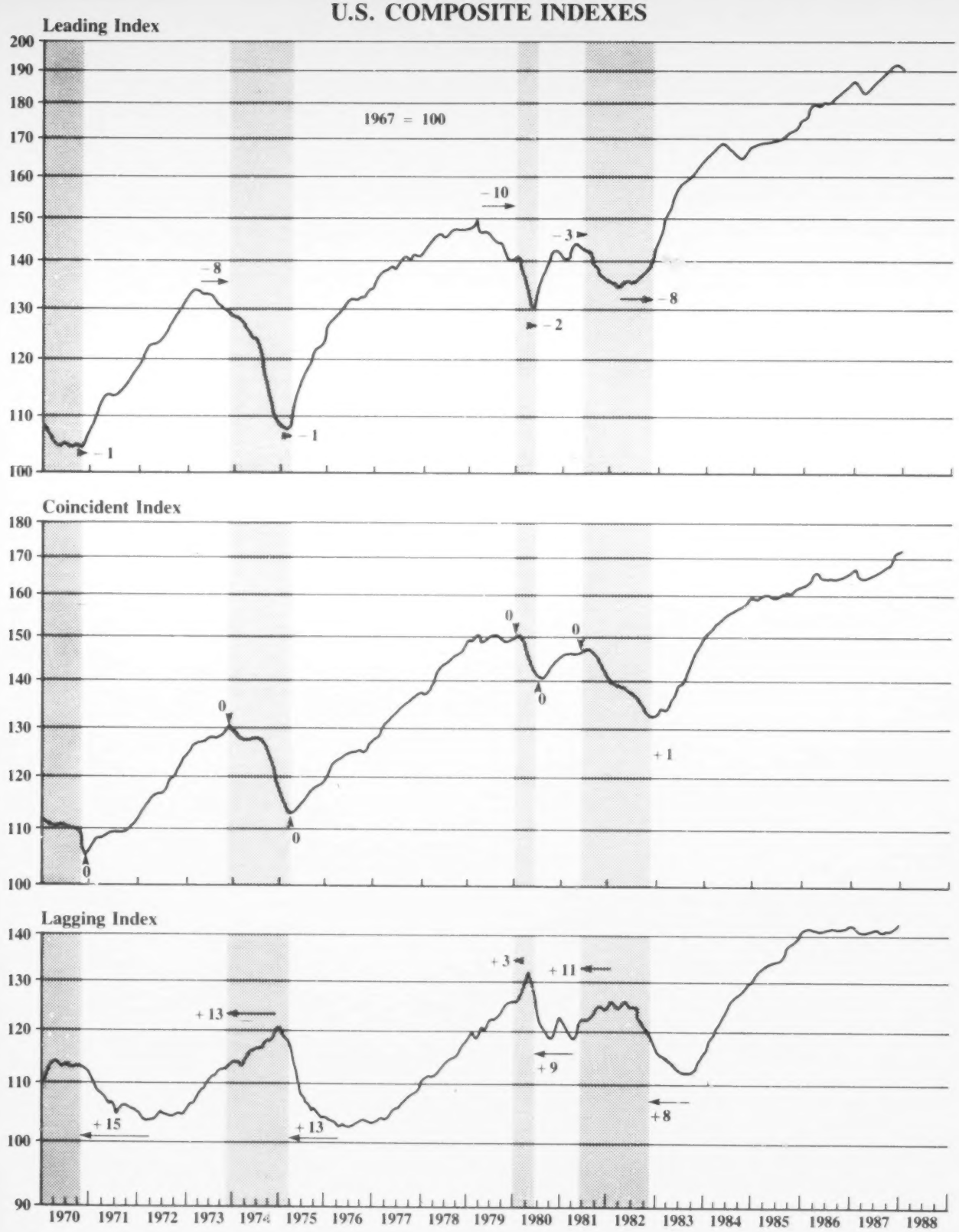
SOURCE: Federal Reserve Bank of Kansas City.
*The data above pertain only to Federal Reserve member banks of Kansas and do not represent all commercial banking in the state. Since 1980, these data have covered approximately 50 percent of the state's banking activity.

TABLE NINE: QUARTERLY SAVINGS AND LOAN ACTIVITY IN KANSAS

	1987 Q3	1987 Q2	1986 Q3	% Change From 1987 Q2	% Change From 1986 Q3
A. Kansas - Mil. $					
Total Assets -	19961.5	19161.8	16300.0	4.17	22.46
Mortgage Loans -	14936.4	14241.9	12873.8	4.88	16.02
B. Kansas City, KS - Mil. $					
Total Assets -	2069.33	2004.17	1965.60	3.25	5.28
Mortgage Loans -	1536.03	1463.33	1550.47	4.97	-0.93
C. Topeka - Mil. $					
Total Assets -	2936.67	2931.47	2924.93	0.18	0.40
Mortgage Loans -	2544.47	2479.37	2319.43	2.63	9.70
D. Wichita - Mil. $					
Total Assets -	2374.50	2346.90	2207.60	1.18	7.56
Mortgage Loans -	1785.87	1773.53	1660.97	0.70	7.52

SOURCE: Federal Home Loan Bank of Topeka.

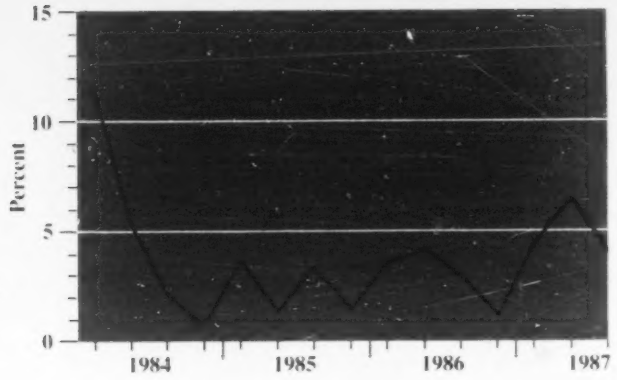
U.S. COMPOSITE INDEXES



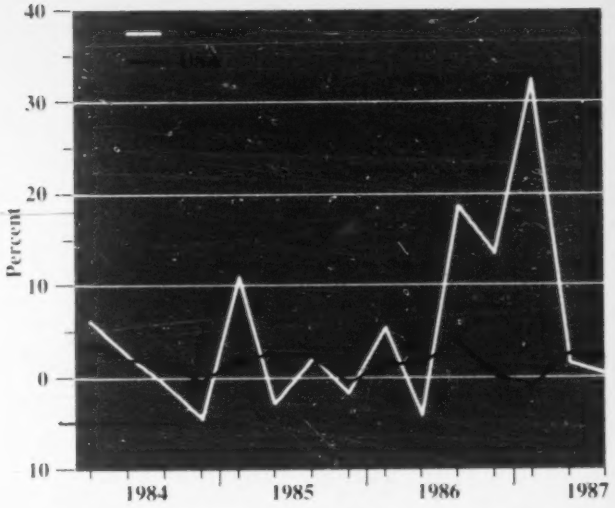
Source: Bureau of Economic Analysis, *Business Conditions Digest.*

Note: Numbers entered on the chart indicate length of leads (–) and lags (+) in months from reference turning dates.
Shading indicates periods of recession.

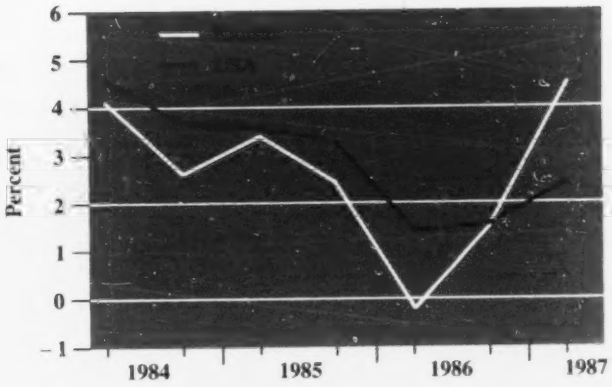
Average Annual Growth Rate of GNP
(1982 Dollars)



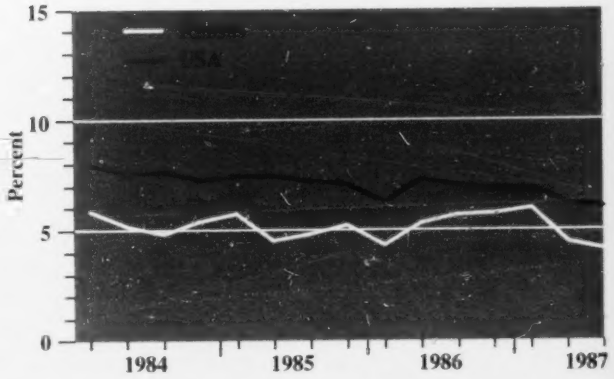
Growth of Retail Sales
(In Current Dollars)



Rate of Inflation
(CPI-U, Seasonally Adjusted)



Civilian Unemployment Rate



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KANSAS BUSINESS REVIEW

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Kathleen Bryant
Don Eskew

The Negative Impact of the Tax Reform Act of 1986 on Equity Investment Returns in Kansas
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Raymond A.K. Cox

The Diversity of Kansas Local Government
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Industrial Growth in Kansas: 1974-1984
Frank Sotrines
Robert J. McElroy
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Economic Conditions
Economic Indicators

The Institute for Public Policy and Business Research, The University of Kansas

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New Challenges for Kansas Vocational-Technical Education . . . 1
Charles Krider, Kathleen Bryant, and Don Eskew

The internationalization of the economy, the aging of the Kansas workforce, and changing technology increase the importance of vocational education. The authors recommend that vocational education focus on the needs of business rather than on training students for a one-skill career.

The Diversity of Kansas Local Government: Is It a Garden Choked by Weeds? 10
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New Challenges for Kansas Vocational-Technical Education[1]

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Introduction

Vocational-technical education in Kansas faces a challenging future. In the past, when low-skill jobs and stable, mass-manufacture technologies characterized the Kansas economy, the vocational education system served the state well by training workers for lifetime vocations. However, radical changes in production technology, international competition, and demographic shifts have altered the nature of the Kansas economy and the state's needs for vocational education.

As industry responds to an increasingly older labor force, develops more flexible manufacturing in response to rapidly changing production technology, and strives to remain competitive in the international market, the Kansas vocational-technical education system will become more important to Kansas's future. But in order for the Kansas vocational-technical education system to continue its service to Kansas industry, it must be organized to respond quickly and efficiently to these trends. A more responsive vocational education system can only be the product of a coherent state-level policy and effective linkage with other economic development priorities.

Kansas Inc., which oversees economic policy formulation for Kansas, has recognized that investment in human capital is part of the state's economic development strategy. Vocational education will be instrumental in developing the state's human capital. Kansas must still address how vocational education can contribute more to the overall economic development of the state. A major finding of this report is that a more coordinated vocational education system should have a higher priority in the state at the present time and should be an integral part of the state's economic development strategy.

We examined changes that will be important for vocational-technical education in the institutions that make up the system: the 13 area vocational-technical schools, 19 community colleges, the Kansas College of Technology, and Pittsburg State University. We concluded that

1. The vocational-technical education system must train people for jobs that will be important for the future of Kansas. For the long-term interests of Kansas, it will do the state no good to continue to provide an abundance of workers trained for a specific low-skill job. In the future, employment that will benefit the worker and the state will come from more highly-skilled, complex jobs.

2. The vocational-technical education system must train workers for entry-level jobs *and* retrain workers throughout their careers. Vocational education should prepare the worker for a lifetime of adaptation to changing technology.

Methodology

Three strategies composed the research methodology for this study. The first involved data analysis and a review of the literature on contemporary trends affecting the national labor market. Second, the Kansas vocational-technical education system was compared with the systems in other states. Finally, we interviewed leaders in politics, business, and education throughout the state. Among those interviewed were 13 directors of Kansas area vocational-technical schools, 16 presidents of community colleges, and 19 representatives from Kansas industry. Leaders from The Kansas College of Technology, Pittsburg State University, the Kansas Legislature, the Kansas Council on Vocational Education, and the Kansas State Departments of Education, Commerce, and Human Resources were also interviewed. Those interviewed identified issues and problems that affect vocational-technical education in Kansas and offered their suggestions for improving the state's vocational education system.

The Changing Economy

Changes in Manufacturing

The standardized, assembly-line,

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mass-manufacture production process no longer dominates industry in the United States. Thus, companies must be poised to manage rapid changes in equipment, technologies, and the demand for labor skills. Low-skill jobs are fast becoming obsolete; the work force must be highly skilled and highly adaptable to rapid technological change in order for its employers to remain competitive in international arenas. A growing emphasis on teamwork requires well-developed communication skills, and increasingly complex production processes demand more exposure to the principles of math, science, and engineering. Evolving production technologies will require that workers upgrade both their general and specialized skills throughout their lifetimes. Indeed, the Bureau of Labor Statistics predicts that the broad occupational groups that require the most educational preparation will grow faster than average.[2]

International Competition

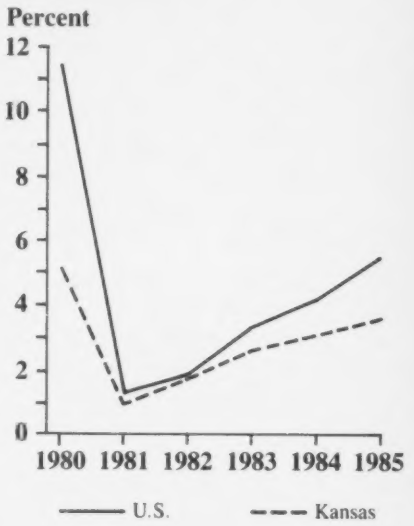
International competition is pressuring U.S. industries to become more efficient. Increasing numbers of industries in this country are closing plants and restructuring production in order to regain their competitive position.[3] To compete in this international marketplace, U.S. firms have sent repetitive manufacturing jobs overseas where costs are cheaper and more people will work for low wages.[4] International competition means fewer unskilled jobs for American workers.

Kansas cannot compete against developing nations based on low wages and low labor costs. The future of Kansas lies with firms that stress innovation, technological change, and a highly skilled and productive labor force. These firms will locate operations in states and communities that offer a high-quality work force and an efficient, quick-delivery training system. Kansas must meet its workers' needs and the needs of business through high-quality programs of general technical education and customized technical training.[5]

Demographic Changes

The demographic profile of the United States and of Kansas also is changing, and these population shifts will affect how industry uses its labor force. In particular, population growth rates have decreased for both the nation and the state (see Figure 1), and growth rates for the nation's youth population *and* its labor force will continue to decline through the year 2000.[6] As Figure 2 shows, the percent of Kansans who are between 17 and 25 years old (the traditional years for vocational training) will decrease, and the proportion of older people in the workforce will increase until the turn of the century. As the number of youthful entrants to the Kansas labor force decreases, competition for recently trained workers will greatly intensify, and business will have to pay more for the high-skill younger worker. Industry will have to devote considerable resources to retraining older workers, and businesses will be recruiting and training nontraditional labor, such as displaced farmers, retired people, the disabled, and women who want to return to the work force after leaving to have children.

Figure 1
Population Growth, Kansas and the United States



Source: Bureau of the Census, *1940 Census of Population*, Vol. 1, *Number of Inhabitants; 1980 Census of Population*, Vol. 1, Chapter A; *Statistical Abstract of the United States*, 1981-1986, p. 21.

Analysis and Recommendations

Economic development in Kansas will require a new focus for its vocational-technical education system. The state must focus on providing a strong educational background of general technical studies, such as math and applied science in the context of vocational training, and an efficient training system to help workers adapt to swift and radical changes in production technologies.

However, many vocational-technical institutions in Kansas now restrict their service to responding to local markets, and most of their funding is local. Figure 3 shows the locations of existing community colleges and vocational-technical institutions.

There are few incentives for those institutions to act in the state's long-term interests, for greater coordination between institutions, or for more efficient use of available resources. Any movement toward a coordinated statewide system, however, will affect the autonomy of local units. An integrated system implies replacing some local funding with state funding.

It is within this context that we offer our analysis and recommendations for the vocational education system in Kansas.

Improve Relations Between the Kansas Business Community and the Vocational Education System

Interviews for this study revealed that many Kansas business executives perceive vocational-technical education to be the isolated offering of a single nearby institution, rather than a range of training options available from the 35 schools that the state system comprises. A Wellington business representative interviewed for the study reflected this point by stating: "The system needs to improve knowledge [about its services]. Where are programs [located]? Are they good? People need to know."

Kansas cannot compete against developing nations based on low wages and low labor costs.

We recommend that the vocational education system improve service to business by establishing formal ties with business on both the local and the state levels.

Without better ties between business and the vocational-educational system, institutions may find it easier to continue funding traditional programs of vocational education, such as cosmetology or auto body repair, because of steady enrollment streams. In addition, the current system offers a number of disincentives to educational administrators for the provision of timely and appropriate responses to industry training needs. For example, state funding stipulations and a complex course approval process encourage institutions to fit instruction into existing courses and curricula. These encumbrances discourage the design of customized training programs that respond more directly to a company's exact set of training needs.

If vocational education is to respond to industry's increasing demands for skilled workers and if it is to keep up with changing technology, its institutions must be in contact with the businesses they serve.

Establish Area Business Development Centers and a Business Training Office

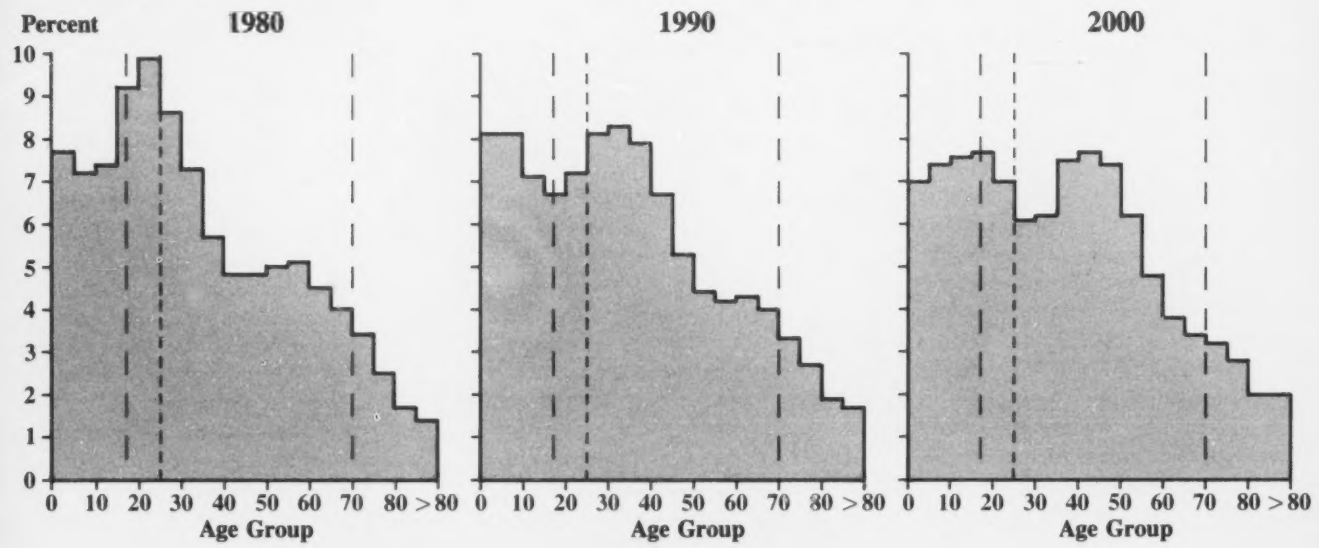
We recommend that the vocational education system improve service to business by establishing formal ties with business on both the local and the state levels. Area business development centers at each post-secondary vocational technical institution and a Business Training Office in the Kansas Department of Commerce should be established to market customized training, inform businesses of existing training programs, and ascertain the training needs of business.

Kansas Training Corporation

We also recommend that the Kansas Legislature establish a quasi-public corporation, the Kansas Training Corporation, which would be a partnership between industry and the vocational-technical education system. Through this corporation, educators would submit proposals for training projects that they have custom-designed for participating companies. Awards would be contingent on matching contributions—in the form of material resources or technological expertise—from the companies that benefit from the training programs. Examples of such contributions would be internships, instructor training, and training equipment.

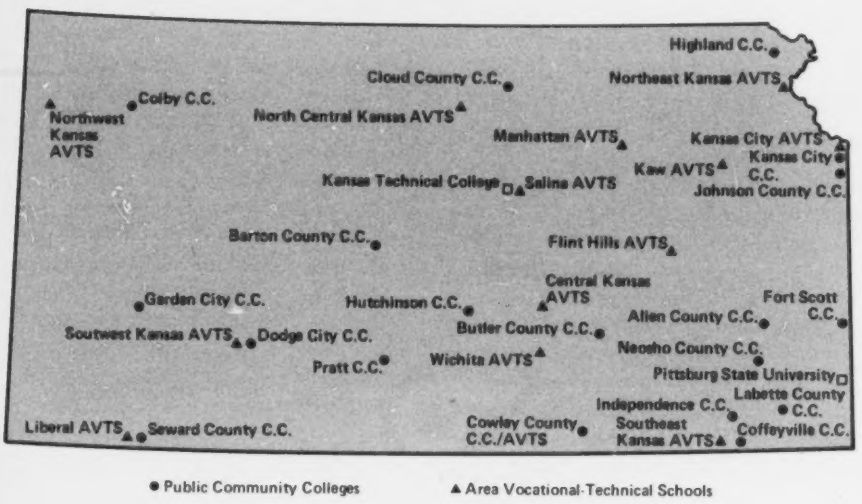
The Kansas Training Corporation would be designed to encourage educators to innovate, and it would enable them to respond quickly to business needs. Ongoing partnerships with specific businesses will also help educators and

Figure 2
The Aging Kansas Work Force
(Percent of Population)



Source: Bureau of the Census, *Current Population Reports*, Series P-25, No. 937, *Provisional Projections of the Population of States by Age and Sex: 1980-2000*, U.S. Government Printing Office, Washington, D.C., 1983.

Figure 3
Kansas Institutions Involved in Job Training



Source: Kansas Department of Education, *Kansas Educational Directory,* 1987–1988, p. 142.

their institutions keep current with the latest applied technology. The Kansas Training Corporation should also establish a special fund for the continuing education of teachers in all fields of vocational-technical education.

Improve Marketing and Public Information

Educational administrators across the state expressed great concern that vocational-technical education in Kansas suffers from, as one area vocational-technical school director said, "a third-class image" among prospective students, parents, and guidance counselors.

The image of vocational-technical education will improve when the system delivers programs that meet the needs of Kansas industry. A comprehensive public information and marketing program for vocational-technical careers and educational opportunities in Kansas is also needed to attract new students and companies that need customized training.

Improve Coordination Within the System

At present there is no procedure for educational institutions in the system to cooperate in regional planning with businesses, nor is there a well-defined mission with operational goals for the system and each of its components. Even scattered cooperative efforts are undermined because, while community colleges operate within defined geographical service areas, vocational-technical schools do not. There are no incentives for cost-cutting cooperative agreements among institutions.

Educational administrators interviewed for this study clearly favored more cooperation among institutions. A community college president stated: "We need to increase coordination in the system. We have to cooperate and clearly define boundaries and avoid overlap in [schools'] missions." The vocational education system must respond to business needs for worker skill enhancement, but it must also assume a proactive posture, discovering market opportunities for educational service. An educational *system* with a clear mission and coordinated objectives can better respond to need and opportunity with speed and efficiency. Planning efforts should explicitly recognize that education benefits the Kansas economy and several constituencies—itself, labor, business, and the community. Partly owing to lack of coordination, there is little relationship between the number of training programs for a specific vocation and the expected demand for workers.

We recommend that each institution have an explicit delivery region and that the State Board of Education provide incentives for all the institutions to cooperate periodically to formulate regional plans. The appropriate governing body within the State Board of Education would review curricula in each region and in each institution in light of current statewide labor needs. The reviewers should be assisted by advisory/technical committees.

Some goals of regional planning and discussion could be to 1) address this statewide disparity between training and job opportunities; 2) eliminate unnecessarily duplicated training programs; 3) offer new courses and programs in response to regional and statewide opportunities; 4) consolidate other programs; 5) select optimal locations for programs based on regional needs; 6) respond quickly to market demands for skills; and 7) maximize the return on public investment by creating cooperative agreements to share resources among institutions.

Because the Kansas vocational-technical education system is constrained by a limited financial base, planning for the shared use of personnel and training equipment should have a high priority. Now schools within the system commonly specialize in a few training areas, but many of the people interviewed said that the schools do not offer all that industries in the region ask for or need.

Training institutions should be offered incentives for designing cooperation

Because the Kansas vocational-technical education system is constrained by a limited financial base, planning for the shared use of personnel and training equipment should have a high priority.

Our interviews show that vocational-technical institutions are not responsible for giving students the necessary foundation in basic educational disciplines or current information about vocational-technical careers and educational opportunities.

compacts to 1) establish equipment and instructor pools; 2) lower tuition for students that travel to more distant schools for training; 3) develop mobile training programs that rotate among selected schools, 4) share expenses of state-of-the-art equipment, recruiting instructors from industry, and developing new education and training programs.

Re-Structure the System

School administrators and business representatives interviewed for this study criticized the vocational education and technical training system in Kansas for unnecessary duplication of courses and programs and a lack of focus at the state level. A regional or statewide vocational-technical education *system* that is well-integrated and well-articulated does not exist in Kansas. Both vocational-technical schools *and* community colleges now train secondary students *and* post-secondary students *and* offer customized training. Such an arrangement provides great opportunity for redundant efforts and other waste.

Our interviews show that vocational-technical institutions are not responsible for giving students the necessary foundation in basic educational disciplines or current information about vocational-technical careers and educational opportunities. This should be the institutional mission distinguishing secondary schools from their post-secondary counterparts.

Secondary schools can best teach their students how to learn, preparing them for more in-depth vocational-technical study at higher levels of education. Secondary schools can also help the student make career decisions by providing the guidance, information, and vocational exposure that the student needs to make informed choices. As production technologies change more rapidly and become more sophisticated, industry will hire fewer workers directly from Kansas secondary schools, but the background provided by secondary schools will become more important for further vocational-technical education.

Post-secondary education, on the other hand, is better positioned as the road from career choice to career experience, as the link between fundamental principles and their specialized application to specific jobs, and as the primary provider of customized training.

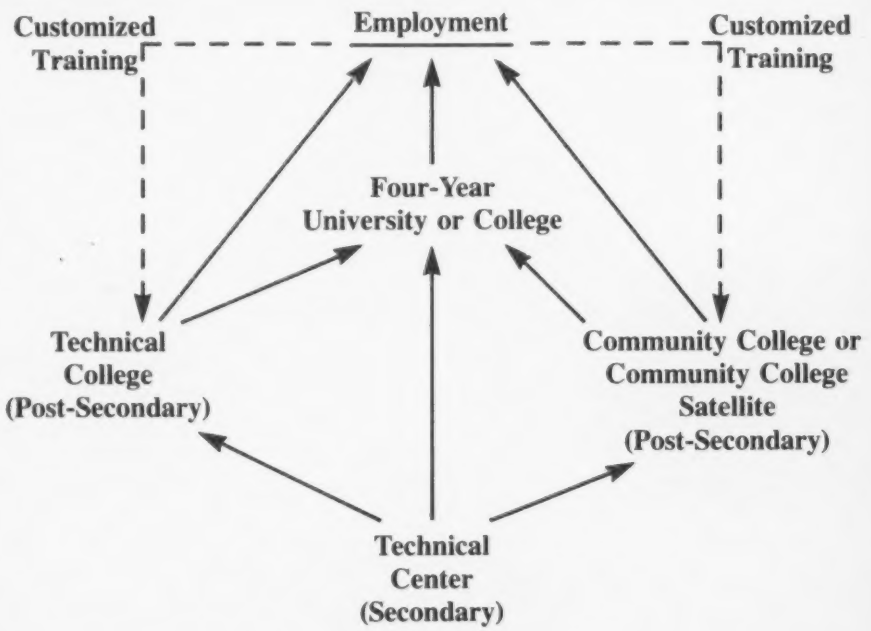
Figure 4 shows the proposed vocational-technical education system for Kansas. This proposal leaves students the option of secondary or post-secondary training, and as always they may choose to continue their educations at four-year colleges or universities. Preserving these options for students will require articulation of courses and training from one educational institution to another.

Area Technical Centers

Secondary vocational-technical education should be concentrated in *area technical centers* and administered by school districts. Only secondary students would attend these centers, which would replace the state's area vocational-technical schools. The primary functions of an area technical center would be 1) vocational-technical career exploration; 2) basic exposure to important principles of technology; and 3) elective vocational-technical courses. A technical center may either stand alone or share a campus with a technical college or community college.

Since technology's role in the marketplace will continue to increase, all students should have some basic exposure to the nature and meaning of technology and should be given ample opportunity to explore the implications of technological change for their work lives and their specific career decisions. These objectives—exposure and exploration—could

Figure 4
Proposed Vocational-Technical Education System Structure



Source: Institute for Public Policy and Business Research.

The interviews conducted for this study revealed a strong consensus among both educators and business representatives that current funding for the vocational-technical education system is inadequate and that the state should provide a larger proportion of the funding.

be accomplished through courses devoted to the basic principles of technology. Such courses should be open to, and perhaps even required of, all secondary school students regardless of curricula choice.

Community Colleges

Community colleges that are located near vocational-technical schools should take over the post-secondary functions of area vocational-technical schools. These combined community colleges/vocational-technical schools would be the primary providers of post-secondary vocational education.

In some cases, an existing area vocational-technical school is near a community college but not in the same community. These schools could become *community college satellites.*

Technical Colleges

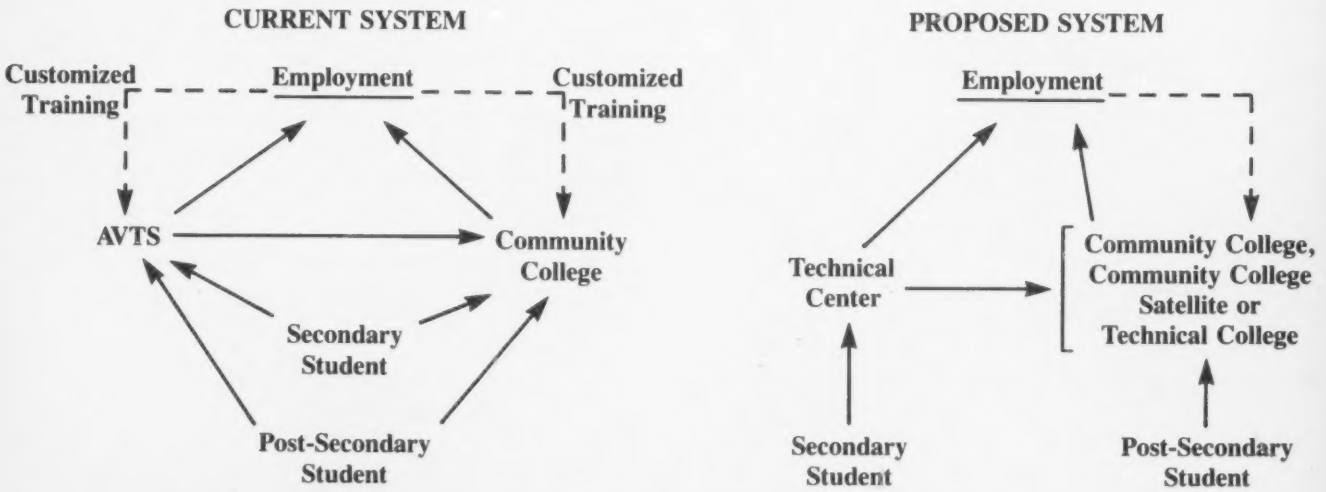
In Wichita, Salina, Emporia, Manhattan, and Topeka, where community colleges are not near vocational-technical schools, convert current post-secondary programs at area vocational-technical schools to *technical colleges* that offer both a certificate for a specific training program and an associates degree for a two-year course of study. Technical colleges could contract with community colleges or local Regents' institutions for the provision of necessary general education courses that would satisfy requirements for both types of program.

Depending on a vocational-technical school's proximity to a community college, its facilities would be converted to either 1) a technical center campus; 2) a technical college campus; or 3) a community college satellite campus. A larger community may need a joint campus consisting of an area technical center and a technical college or a community college satellite. While these choices may be difficult, they represent a reasonable arrangement that is consistent with arguments and objectives discussed elsewhere in this report. Figure 5 shows the current system of secondary and post-secondary vocational education and the proposed separation of these functions.

Kansas Technical Institute

Kansas Technical Institute in Salina, currently has about four hundred students. Its mission, to train engineering technicians for highly skilled occupational tasks, is already established. Its service area is defined as including the entire state. Kansas Technical Institute should not duplicate other vocational training programs in the state, nor should other vocational training institutions take on Kansas Technical Institute's mission or programs. Rather, graduates of community colleges and technical institutions should be able to go to Kansas Technical Institute for their continuing education. And if this advanced level of training is

Figure 5
Separation of Secondary and Post-Secondary Vocational-Technical Education



Source: Institute for Public Policy and Business Research.

Customized training helps firms grow, but current funding formulae constrain the ability of community colleges to respond to company needs.

needed in industrial areas far from Salina, Kansas Technical Institute might lend its instructors to vocational-technical institutions or community colleges in the industrial area. To reflect its function as a provider of more advanced technical training, Kansas Technical Institute should be renamed Kansas College of Technology.[7]

Improve Funding

The interviews conducted for this study revealed a strong consensus among both educators and business representatives that current funding for the vocational-technical education system is inadequate and that the state should provide a larger proportion of the funding. The current system, where mostly local revenues fund vocational-technical education, encourages programs that are responsive to local needs. Although this is desirable, a regional or state focus is often needed. Funding levels are not the only constraint on educational activities; the design of funding formulas also limits the system's ability to respond quickly and effectively to training needs and opportunities.

Link Federal Job Training Funds to Kansas Economic Development

The U.S. Congress passed the Job Training Partnership Act as a means of investing in human capital to increase the earnings and employment of participants. This year, the Kansas Department of Human Resources received $14 million in federal funds for job training in Kansas, and next year it will receive nearly $16 million. In 1987, federal funds administered under the provisions of the Job Training and Partnership Act (JTPA) financed job training for 25,558 Kansans.[8]

We recommend that a percentage of these federal funds be earmarked to pay customized training costs for economic base companies that are new, expanding, or in the process of restructuring their products or production processes to achieve competitive strength.[9] A percentage of federal funds should also be specifically committed to Kansas post-secondary vocational-technical institutions. Educators at these institutions would then be left to recruit disadvantaged students who would be eligible for JTPA programs.

In order to strengthen the relationship between JTPA and Kansas economic development objectives, JTPA administrators for the six Service Delivery Areas in Kansas might wish to establish the following goals: 1) Some JTPA funding should go to every customized training program in the area, and 2) At least 20 percent of disadvantaged workers trained with JTPA funding should be placed in economic base companies.

Create Appropriate Funding Formulae

Customized training helps firms grow, but current funding formulae constrain the ability of community colleges to respond to company needs. In order to receive state reimbursement for customized training, many programs must be conducted under the title and schedule limitations of academic courses that have survived a lengthy and rigorous approval process. As a result, companies and their trainees may be subject to unnecessary training and to schedules that conform to the academic year rather than to the needs of the firm. If customized training cannot be structured as an academic course, then the state will not pay for training; the entire training cost must be born by the company and local government.

All funding formulas should undergo rigorous scrutiny to determine their impact on the ability of educational institutions to serve their markets and contribute to Kansas economic development. Without examination and corrective action, institutions will continue to be discouraged from responding to market conditions.

Increase State Funding

A study conducted by the Bluegrass State Skills Corporation reported that Kansas's per capita allocation to industry-specific training programs was $0.21 in fiscal year 1986-1987 (see Table 1). Indiana, by contrast, allocated $2.26 per capita. Table 2 shows that state funding covers a smaller percent of community college budgets in Kansas than in similar states. For Kansas to compete with other state programs of pre-employment and customized training, the state must make a stronger commitment to vocational-technical education by providing sufficient funds for highly trained instructors and up-to-date-programs and equipment.

A larger role for state financial sponsorship of the system will ensure that programs are consistent with its statewide mission, structure, and governance.

Expand Local Funding Base

The 19 existing community colleges now depend on revenues from the county where they are located for an average of 59.2 percent of their budgets.[10] If, following these recommendations, community colleges increase the area they serve, then the support base for each community college should also increase. The local funding base for each community college should include every county assigned to that institution's service area. The same principle should guide technical college funding. Under this scenario, each of the state's 105 counties will assume a share of the responsibility for strengthening vocational-technical education in Kansas.

This funding arrangement would also eliminate the cumbersome transactions

Businesses that have introduced new products or new production technologies cannot get funding for retraining their current employees unless the business is expanding.

Table 1
State Allocations for Industry-Specific Training Programs
Fiscal 1987

State	Per Capita Allocation
Indiana	$2.26
Missouri	1.75
Michigan	1.40
Illinois	1.30
Ohio	1.02
North Carolina	0.90
Georgia	0.68
Alabama	0.62
Mississippi	0.56
Virginia	0.44
Oklahoma	0.40
Louisiana	0.25
Kansas	**0.21**
Kentucky	0.19
Florida	0.15
West Virginia	0.14
Maryland	0.11
Texas	0.06

Source: Bluegrass State Skills Corporation, "Survey of State Supported Industry-Specific Training Programs," August 1987.

that result when a student outside the community college district enrolls. As out-district enrollments in community colleges continue their steady increase—a trend that developed from 1981 to 1985—the out-district tuition reimbursement program becomes more unwieldy and less appropriate. It should be abolished.

Establish a Program to Fund Retraining

State funding of job training programs currently is limited to the Kansas Industrial Training Program (KIT), which only sponsors customized training for new and expanding firms. Most federal funds, available through the Job Training Partnership Act, are limited to disadvantaged people. Thus, businesses that have introduced new products or new production technologies cannot get funding for retraining their current employees unless the business is expanding.

As new technologies revolutionize the marketplace and as the Kansas work force ages, retraining programs will become more important incentives for businesses to remain in Kansas or expand their Kansas operations.

We recommend that the state offer funding for customized training for Kansas businesses that are preparing to offer new products or institute new production technology.[11]

A fund should also be established for retraining employees of firms that anticipate work layoffs or plant closings. This fund would be similar to the unemployment fund. It would be established by the employer, who would make joint contributions with the employee with a small payroll assessment throughout an employee's tenure with the firm. Funding for retraining should reduce the demands on the unemployment insurance fund (and the size of premiums), since workers can be retrained quickly for other jobs that already exist instead of waiting for the reinstatement of jobs that have become obsolete.

Kansas should allow a deduction from Kansas personal income for contributions to Individual Training Accounts. Such accounts would be fringe benefits under the control of the employee. The tax deduction for these accounts would encourage employees to upgrade their skills when they are not in a position to lose their jobs.

Commit to Capital Outlay

The quality of vocational-technical programs depends upon the quality and availability of material resources, and up-to-date equipment is an especially critical component of that resource base. During 1985-1986, capital outlay (funding used for equipment and building improvements) disbursements from state and local sources totaled $4,366,004 for area vocational-technical schools and $3,391,185 for community colleges.[12] During 1986-1987, there were no disbursements for capital equipment or building improvements for vocational-technical institutions.

Educational administrators interviewed for this study said that long-range improvements are particularly difficult when they cannot rely on continued funding. Special funding for equipment is crucial because technology is changing quickly and vocational-technical institutions need to train students on up-to-date equipment. Annual disbursements for equipment should be an investment priority. To neglect capital outlay seriously jeopardizes the quality of vocational-technical education and the competitive position of Kansas industry. The state should establish a strong commitment to maintain consistent funding levels for capital outlay for the Kansas vocational-technical education system.

Investigate Innovative Funding Arrangements

Kansas government need not assume full responsibility for higher levels of financial support for the state's vocational-technical education system. Other states have developed funding mechanisms that distribute some of the financial burden of education and training programs to the companies and communities that benefit from those services. Financial arrangements such as those listed below have considerable merit and deserve the attention of Kansas policy makers.

1. Illinois legislation allows communities to fund customized training at post-secondary institutions using *tax increment financing*. Communities issue bonds that are paid off by increased tax revenues resulting from the client business's growth.[13]

Table 2
Percent of Community College Budget Paid by the State
Fiscal 1986

	%
Kansas*	21
Missouri	42
Iowa	47
North Carolina	70-90
Nebraska	39
Colorado*	75

*Fiscal 1985

Source: Telephone survey of state community college governing agencies and information divisions. Kansas percents based on *Statistical and Financial Information of Kansas Community Colleges*, Kansas State Department of Education, February 1986.

Without purposeful collaboration, a common mission, and statewide goals and objectives, attempts to align the Kansas vocational-technical education system more closely with the needs of Kansas industry will produce sub-optimal results.

2. Iowa finances job training needed for new undertakings by selling *training certificates*, which are like tax-exempt municipal bonds. Some of the tax revenues generated as a result of the new enterprises are earmarked for repaying the certificates.[14]

3. Oklahoma encourages the formation of *business cooperatives* so that businesses may share payment for management instruction and technical training programs.[15]

These funding mechanisms should be examined to determine their effectiveness and their suitability for Kansas.

Summary

Without purposeful collaboration, a common mission, and statewide goals and objectives, attempts to align the Kansas vocational-technical education system more closely with the needs of Kansas industry will produce sub-optimal results. The health of the Kansas economy depends largely on its labor force, and the calibre of that labor force will erode if the state does not adequately fund vocational-technical education and educational leaders do not cooperate in planning. The choice for Kansas—between a labor force of high quality and the erosion of the state's principal competitive advantage—is of great strategic consequence. The challenge before the Kansas leadership is that choice; the risk of inaction is unnecessary economic decline.

Notes

1. In response to a federal mandate and the interest of policy makers, the 1986 Kansas Legislature asked the Kansas Council on Vocational Education for an evaluation of the state's system of vocational/technical education. This article is taken from the analysis and recommendations that the authors prepared for the research component of the evaluation.

2. U.S. Department of Labor, Bureau of Labor Statistics, *News*, June 25, 1987.

3. R. Erik Reidenbach and Troy Festervand, "A Strategic Marketing Planning Approach to Economic Development and Industrial Policy Decisions," *American Business Review*, January 1987, pp. 13-21.

4. David L. Birch, "Is Manufacturing Dead?" *Inc.*, June 1987, pp. 35-36.

5. Customized training is specific training requested by a business to be provided by a training institution. The institution "customizes" training to fit the particular needs of the company.

6. Bureau of Labor Statistics, *News*, 1987.

7. The Kansas Legislature passed a bill authorizing this change April 13, 1988.

8. Telephone conversation, Armand Corpolongo, policy analyst, Department of Human Resources, Division of Policy and Management Analysis, April 26, 1988.

9. Economic base industries lead to economic growth in a community by selling products outside the community and bringing in new money.

10. Kansas Department of Education, *Kansas Community Colleges: Financing the Future*, 1988.

11. The Kansas Legislature passed a bill authorizing the Kansas Industrial Retraining Program on April 13, 1988.

12. Kansas State Department of Education, Division of Financial and Support Services, *Facts About Education in Kansas*, undated.

13. "State Profile: Hard Times Lead to 'Boom' in Illinois' Programs," *Economic and Industrial Development News*, February 24, 1986, pp. 10-12.

14. "State Profile: Iowa Looks to New Harvests," *E&I Development News*, December 2, 1985.

15. "State Profile: The 'Sooner State' Sets a Fast Pace for Development," *E&I Development News*, February 10, 1986, pp. 5-7.

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The Diversity of Kansas Local Government: Is It a Garden Choked by Weeds?[1]

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Introduction

Kansas has more than four thousand governmental authorities. Only four states—Illinois, Pennsylvania, Texas, and California—have more. The average number of governmental units per state is 1,647. Included in this number are authorities with broad reaching responsibilities, such as city commissions, as well as those with more narrow purposes, such as airport authorities. Most of these units of government tax citizens and provide services that directly affect their lives.

The great proliferation of local governments in Kansas has advantages and disadvantages. The number of units suggests that much of Kansas government is highly decentralized. Citizens with irrigation problems, concern for public schools, or interest in industrial development turn to governments of neighbors rather than large state agencies. Local problems receive local attention. The large number of governmental units in Kansas does, however, raise serious questions about the consistency and efficiency of the delivery of services.

The major finding of this study is not that local governments are poorly managed or that services are inefficiently provided. This examination of the structure of local government makes a more basic point. The proliferation of governmental authorities in Kansas makes it impossible to give meaningful answers about the quality and efficiency of services delivered to Kansans. Responsive and effective local governments exist alongside narrow and wasteful ones. Efficiency is left to the knowledge, good will, and earnest efforts of individual local government officials. Efficiency is not part of the design of local government service delivery, and the potential for problems is, therefore, high.

There are two basic approaches to improving efficiency in delivering government services. One approach is to develop standards and outcome measures for services. Minimum competency tests for public schools are an example. While

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Even where the potential for problems is high, many local governments have developed creative solutions to avoid the pitfalls of highly decentralized government.

researchers have developed measures of recreational, transportation, crime control, fire protection, and other services, in practice these measures are rarely applied to local government services.

One advantage of encouraging efficiency by measuring results is that it fosters a variety of approaches to delivering services. Services could be delivered by private firms, special districts, or government bureaucracies as long as costs and outcomes are measured and compared. Unfortunately developing and applying outcome measures for the wide range of government services is technically difficult and costly. The second approach is to set up stringent administrative control over the delivery of services. The process assures accountability and facilitates the communication of information about standards and performance. The bureaucratic approach increases the likelihood of consistency of meeting standards of effectiveness by augmenting supervision. Unfortunately, establishing this kind of management for local government services can change the character of local government. Professionals rather than citizens manage services. In addition, establishing administrative control over services adds overhead costs that may, in the end, reduce efficiency.

This report on local government in Kansas has three major sections. The first section describes the forms and responsibilities of the various types of governmental authorities in Kansas. In the second section, the issues and problems that result from the structure of local government are identified. The final section discusses the problems and advantages of the various options for the reform of local government.

Types of Governmental Authorities

Counties and Cities

County and municipal government exist to provide public services and to protect the property rights and the general health and welfare of the people. County governments may act as an agent of the state. In this capacity, counties appraise real estate and personal property and collect and distribute taxes for the state; register and license vehicles; sell hunting and fishing licenses; and ensure that state election procedures are strictly followed.

As governing entities, counties and cities typically provide several services:

- streets and roads
- courts
- police protection
- fire protection
- planning and zoning
- libraries
- parks and recreation
- airports
- public health care

They may also issue industrial revenue bonds for economic development purposes.

In addition counties provide for highways, jails, civil defense, solid waste disposal, and enforcement of health regulations.

Cities can provide public utilities, sidewalks, street lights, refuse collection, and sewers. They enforce electric, plumbing, and fire codes, and they may license and regulate business.

Townships

Townships are quasi-corporations and held to be local subdivisions of the state for the purpose of governmental administration. At one time townships provided certain important functions as agents of the state, but now much of their power has been revoked by the state and placed in the hands of counties or municipalities. The powers which townships continue to exercise include licensing of entertainment facilities and road maintenance. In a few counties township zoning boards may be established. Townships also play a role in the administration of special district/limited purpose governments.

Special Districts

Special districts or limited purpose local governments are designed to supplement existing local governments. Special districts are a major source of government proliferation in Kansas. They have taxing and spending powers. Even though special districts are responsible to cities, counties, or the state, they retain a great deal of autonomy. Table 1 lists some common types of districts and some of their principal powers. While many variations exist among the districts, in general elected boards oversee the operation of the districts and select their officers from among themselves. Remuneration is minimal in all cases.

Usually, state enabling legislation provides the basis for establishment of the districts, subject to a petition effort by those persons affected by the creation of a district. In most cases, the power to dissolve a district is related to the power to create a district; a petition procedure and enabling legislation are involved.

As Tables 2 and 3 show, the scope of authority varies widely among the districts. The ability to tax and hold land are the most widespread powers.

Problems in Governing Local Government

The proliferation of governmental entities in Kansas creates a potential for problems in delivering services. In this section, two potential problems are discussed: the overlapping of responsibilities and the wide variation in cost and allocations for services. It is important to stress that this research can only identify the potential for problems and does not document the actual presence of problems. Such a finding would require an in-depth examination of specific local governments. Even where the potential for problems is high, many local governments have developed creative solutions to avoid the pitfalls of highly decentralized government.

Table 1
Special Districts in Kansas

Type	Description	Number in Kansas
Irrigation Districts	Construct, maintain, and operate dams, reservoirs, slurries, ditches and canals for irrigation	7
Groundwater Management Districts	Manage and conserve groundwater within the district	n/a
Watershed Districts	Construct dams to alleviate erosion, control floods, and reduce stream sedimentation	83
Drainage Districts	Construct public works to provide flood protection	78
Soil Conservation Districts	Develop soil conservation plans for landowners	105
Sewer Districts	Construct and operate sewer system	93
Rural Water Districts	Construct and operate dams, ponds, reservoirs, pipelines, and wells and to provide water to rural users	n/a
Community College Districts	Provide academic, vocational, and adult education programs	19
Library Districts	Provide library services	32
Hospital Districts	Operate hospitals, nursing homes, medical clinics, and dental clinics, and provide medical emergency services	29
Industrial Districts	Encourage the growth of industry in a county by giving tax breaks; provide storm and sanitary sewers and sewage disposal systems, steam lines, streets and street lighting, waterworks, water wells, water lines, fire stations and fire fighting apparatus, incinerating plants, dumps for industrial waste, administrative offices, first aid facilities, and hospitals	2
Community Building Districts	Manage, operate, and maintain a specific community building	2
Airport Authorities	Acquire and manage air bases and other property declared surplus by the United States, the state, or any political subdivision	3
Cemetery Districts	Maintain, operate, and regulate cemeteries; in some selected counties, maintain and improve roads leading to the cemetery	747
Improvement Districts	Provide limited urban or municipal services such as sewers, water, and roads	22
Fire Districts	Protect life and property from uncontrolled fires	350

Source: Bureau of the Census, *1976 Census of Governments*, Vol. 1, *Governmental Organization*. Numbers of units were updated as researchers learned of changes.

Overlapping Responsibilities

Overlapping responsibilities present problems for all levels of government. Services and obligations are rarely confined to governmental boundaries, whether they are nations, states, or cities. Nevertheless with smaller governmental jurisdictions, the problem of overlap worsens.

In Kansas, overlap is present in a wide array of services but greatest in building and maintaining roads and highways and in police work. State, county, and city governments have shared responsibility for both areas. Although each local jurisdiction has responsibility for roads and public safety within its own area, provision of effective transportation and criminal justice services depends on cooperation of different levels of government. When traffic congestion in cities requires a county by-pass or when drunk drivers leave city limits, effective service depends on intergovernmental relations.

When collaboration between governmental jurisdictions is strained, services are diminished. This problem is exacerbated where the interests of each locality conflict. For example, building a by-pass may serve city residents at the cost of routing traffic through county farms. Highly decentralized local governments become special interests that make collaboration difficult. Larger governmental entities must respond to a wider range of interests and are thus more often forced to balance conflicting yet legitimate concerns. Broader public interests, such as increasing economic development, can be hampered or diminished by special interests entrenched in local governments.

Variation in Costs and Allocation of Services

Two major and related potential problems created by the proliferation of local government jurisdictions are the unequal distribution of the costs and services of government. Small local jurisdictions may be efficient given their resources and scale of operation, yet they may still be expensive in per capita terms. To examine this issue, the average dollar amount of tax money raised and spent per resi-

As the size of the county increases the cost per resident of providing county services decreases.

Governments could see privatization as a way of economizing by reducing capital expenditures and debt.

dent was examined across Kansas counties. There is wide variation within counties in the amounts individuals pay in property taxes, so the per resident averages are useful only for cross-county comparisons. These figures were generated based on the 1985 tax rate, assessed tangible valuation, and population. Table 4 displays the comparisons for general operating expenses, roads and bridges, health, and total tax rate per county.

The tax and expenditure rates in Table 4 obscure important differences between counties. For example, some counties include public safety in general operating expenses, others do not. Many larger counties create special districts which levy additional taxes that do not appear in these figures. More importantly, Kansas counties vary widely from low density, rural counties with valuable farm land to populated urban counties. Providing police services, for example, is simply more expensive on a per resident basis in rural than urban areas.

Despite these caveats, Table 4 documents the wide variation in county tax rates and expenditures for the selected services. For example, nearly $495 is collected per resident in Comanche County, whereas $57 is collected per resident in Johnson County. Even more comparable counties such as Douglas and Saline impose markedly different tax burdens, $104 and $68 per resident, respectively.

Cherokee County, a rural county with low assessed tangible valuation, has the lowest per resident tax level of $0.76. Its neighbor to the north, Crawford County, has slightly less than double the population but over 140 times the assessed tangible valuation. Residents in Crawford County pay, on average, $84 a year in county taxes. Other rural counties with low population but high assessed valuation pay relatively high per resident taxes. In Coffey County the per resident tax is $981; in Kearny $810. Kearny's neighbors have much lower rates: Wichita, $389; Finney, $219; Grant, $513; and Hamilton, $589.

Table 4 documents the extremely wide variation across the state in tax rates and amount allocated for the selected services. This pattern is evident even if we ignore the differences in population and

Table 2
Fiscal Powers of Special Districts

Type of Special District	Taxing	Bonding	Assessment	Charges User Fees	Debt/ Loans	Eligibility for Aid: Federal	State	County	Gifts
Irrigation	x	x	x	x	x				
Soil Conservation				x			x	x	x
Ground Water Management		x	x	x			x		
Watershed	x	x	x	x		x	x		
Drainage	x	x	x			x			
Community Junior Colleges	x	x		x			x		x
Library	x	x				x	x		x
Hospital	x	x			x	x			x
Industrial	x	x		x					
Community Building	x								
Airport Authority	x	x			x	x	x		
Cemetery	x			x					x
Improvement	x	x	x	x					
Fire	x	x							
Sewer	x	x	x	x					
Lighting	x								
Rural Water	x	x	x		x		x		
Recreation Commission	x*			x		x			

*by city or school district

Source: Bureau of the Census, *1982 Census of Governments*, Vol. 1, *Governmental Organization*, pp. 182-186.

Table 3
Other Powers of Special Districts

Type of Special District	Eminent Domain	Legislative Rule Making	Enter Litigation	Contractual	Construction	Hold Land
Irrigation	x				x	x
Soil Conservation		x	x	x		x
Ground Water Management	x		x	x	x	x
Watershed	x			x		x
Drainage	x	x			x	x
Community Junior Colleges	x	x	x	x		x
Library			x	x	x	x
Hospital	x*	x			x	x
Industrial			x	x		x
Community Building		x				
Airport Authority	x	x	x	x		x
Cemetery					x	x
Improvement	x		x	x	x	x
Fire	x			x		x
Sewer	x	x	x	x	x	
Lighting						
Rural Water	x		x	x	x	x
Recreation Commission				x		

*County commission.
Eminent Domain: the authority to acquire by purchase, condemnation, or other means private property for district purposes.
Legislative or Rule Making: the authority to adopt rules and regulations for the governance of the district.
Enter Litigation: the authority to sue and be sued.
Contractual: the authority to enter into contracts on behalf of the district.
Construction: the authority to construct the necessary facilities for operation of the district.
Hold Land: the authority to own and hold land for district purposes.

Source: Bureau of the Census, *1982 Census of Government*, Vol. 1, *Governmental Organization*, pp. 182-187.

assessed valuation. The county tax rate ranges from a low of 12.8 per thousand dollars of assessed valuation in Seward County to a high of 62.1 in Jackson County. Important differences between counties may partially account for the wide variation in tax rates. Nevertheless the extent of the variation indicates a potential problem in the state.

One likely explanation for this is the relative cost of providing government services in rural communities. Figure 1 compares the per resident amounts taxed for health care, roads, general operations, and the overall rate to the county populations in thousands.

The general pattern is similar in all four graphs. As the size of the county increases the cost per resident of providing county services decreases. In addition, all four graphs show a dramatic decline in tax rates per resident as the county populations grows from 4,000 to 6,000. Figure 1 shows that the overall tax rate then levels off until the population reaches 11,000. The rate then declines steadily as the population increases. Expenditures for services and general operation tend to increase slightly in counties between 6,000 and 15,000 residents and then decline again as the population increases.

These patterns are likely the result of two factors: the higher costs of providing services in rural communities and the lack of economies of scale in small governing units. The first factor places limits on the ability of local governments to provide uniform services to all Kansans, while the second indicates the need to examine county governments more closely for areas of potential collaboration and consolidation to achieve greater efficiency.

Options for Reform

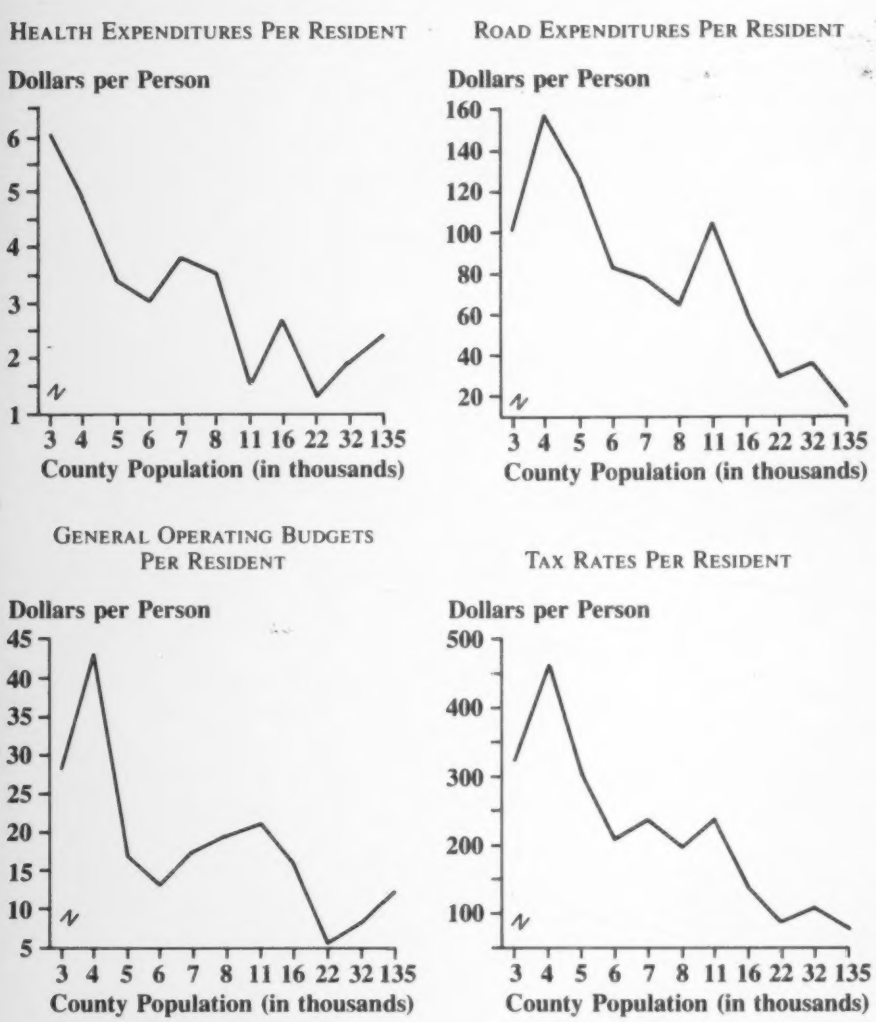
No one is more aware of the patterns of proliferation and the problems in coordinating and funding local service than local government officials. It is important, therefore, to examine what local government officials are doing to mitigate these problems as the foundation for suggestions for reform. Four types of locally generated reforms are discussed: privatization, professionalization, government consolidation, and cooperative agreements.

Privatization

In Kansas, privatization has paled in comparison with inter-local agreements to answer public demand for efficiency and economy. Efficiency, economy, and equity are justifications for privatization, yet each idea carries with it an ideal that reflects how individuals view the role of government in society. Privatization can prove more difficult to achieve than other means of service improvement because it is often associated with reductions in service.

The primary advantage of professional county management cited by officials in Johnson County is increased coordination.

Figure 1
County Population and Costs of Government, 1986



Source: "1985 County Tax Rates for 1986," *Kansas Government Journal*, January 1986, pp. 18-19.

Privatization in the United States has two meanings: 1) privatizing production and 2) contracting out and completely privatizing the provision of service. Contracting services to the private sector has traditionally been a role of government. Privatizing the provision of public services is more controversial. This form of privatization requires turning over areas of responsibility, such as prisons or schools, to business organizations. Privatizing provision is rare in Kansas.

Privatizing Production

Privatizing production is another term for contracting: governments hire private businesses to provide services. Governments remain responsible for the service and continue to finance it. Governments turn to privatization of this sort for various reasons. They could see it as a way of economizing by reducing capital expenditures and debt. In addition, private firms can offer the expertise that government can find too expensive to provide.

Another motivation for privatization is efficiency. Efficiency may increase after privatization because in order to contract for service provision, governments must set standards and measure performance. The use of outcome measures may be more important for improving efficiency than the fact that private companies complete the work.

Privatizing Provision

Privatizing provision occurs when government withdraws or reduces its role as buyer, regulator, standard setter, and decision maker. Some call this type of privatization load shedding. Privatizing provision is much more controversial than privatizing production.

Therefore, in this country and in Kansas privatization generally means contracting out. Very few services have actually been abandoned by government, but in many cases the role government plays has been reduced by the increasing number of private firms involved in the administration of public policies. These changes have reduced government's control over individuals, groups of people, and policies in general.

Examples of Privatization

In Lenexa, Kansas, individuals contract with private firms for the removal of trash from their residences. The city sets rate limits that the private services are bound to follow. All companies must be licensed by the city. By longstanding agreement, the city has never provided residential trash removal.

Lenexa also saves money on emergency snow removal. If city traffic engineers decide that there is too much snow for city vehicles to remove, they can contact private firms that the city has subcontracted to plow on an on-call basis. Subcontracting provides more efficient snow removal during major storms and increases cost effectiveness because the city does not have to maintain a fleet of seldom-used snow removal equipment. This same arrangement has been made for large maintenance problems caused by storms or floods.

Through privatization, Johnson County has avoided issuing bonds and incurring debt in order to provide public transportation. The Johnson County Department of Transportation contracts with

a private vendor, ATE Management and Service Company, which provides the services using its own employees and vehicles. Since private companies have more expertise in this area, it is more efficient for the county to subcontract for public transportation. Subcontracting offers incentives for the company to provide a good service and keeps capital cost down. The county can define the level of service, provided they are willing to pay for it.

Professionalization

A second major approach to improving efficiency is shifting responsibility for the daily operation of local government from an elected board to a professional manager. This approach separates the broad policy-making role of elected officials from the management of offices and implementation of policy. Professional management promises to increase consistency and control, two dimensions of efficiency. Johnson County provides a useful case example of this reform.

In 1976 Johnson County voters rejected a reform that would have eliminated several elected positions, including the sheriff, and established the appointed position of county administrator. In 1983, however, the Johnson County Commission formally recognized the position of county administrator, and they appointed a professionally trained county administrator. An important element in Johnson County's decision to establish professional management was the presence of professional city management within the county. The duties and responsibilities of a county administrator are similar to those of city managers.

The primary advantage of professional county management cited by officials in Johnson County is increased coordination. Instead of dealing with a number of department heads, the commission deals with the administrator. The administrator, in turn, deals with the various departments. County administrators, in contrast to city managers, must deal with a larger number of autonomous departments. A county administrator has, for example, no authority over an elected sheriff. The degree of professionalization is determined, therefore, by the extent of centralization of authority in the county administrator.

Table 4
Cost of County Government per Resident, 1986

County	General Operation	Roads & Bridges	Health	Total Rate
Allen	$ 2.59	$ 89.06	$ 5.73	$147.83
Anderson	16.61	59.65	2.48	164.21
Atchison	0.23	26.85	1.27	68.78
Barber	0.89	13.27	0.46	26.94
Barton	14.19	30.34	2.98	83.13
Bourbon	11.63	34.77	1.66	89.13
Brown	13.63	58.58	1.68	120.92
Butler	2.35	29.50	1.82	130.31
Chase	11.35	102.46	4.00	286.80
Chautauqua	11.69	91.91	2.74	216.79
Cherokee	0.05	0.18	0.00	0.76
Cheyenne	23.49	70.59	0.00	250.35
Clark	0.70	15.60	1.03	29.23
Clay	32.43	68.02	2.32	181.63
Cloud	0.00	88.43	4.61	176.77
Coffey	54.58	520.56	5.83	981.29
Comanche	0.00	159.93	5.51	493.80
Cowley	8.93	19.36	1.95	72.15
Crawford	8.33	19.59	2.08	84.39
Decatur	1.98	9.06	1.25	47.19
Dickinson	3.51	38.50	1.93	89.36
Doniphan	11.89	42.13	0.00	129.40
Douglas	16.04	14.06	3.56	104.01
Edwards	9.78	69.28	0.00	190.83
Elk	28.52	85.55	5.70	268.81
Ellis	0.00	82.02	1.90	146.16
Ellsworth	0.00	45.18	5.33	174.97
Finney	3.20	103.55	3.51	219.08
Ford	3.09	30.83	1.40	108.75
Franklin	10.78	33.91	0.49	108.27
Geary	8.40	11.10	0.73	66.71
Gove	0.00	166.02	0.00	298.25
Graham	31.29	178.81	5.82	554.15
Grant	54.16	186.48	6.13	513.13
Gray	18.11	166.67	5.61	325.36
Greeley	20.94	147.85	25.35	434.81
Greenwood	43.43	63.37	2.82	220.21
Hamilton	111.39	124.12	6.98	588.62
Harper	19.81	90.25	8.32	224.48
Harvey	12.77	16.97	1.40	77.91
Haskell	52.04	243.01	0.00	424.17
Hodgeman	69.04	188.23	0.00	581.55
Jackson	21.77	37.61	1.56	170.25
Jefferson	2.80	31.38	1.40	116.11
Jewell	20.90	105.89	2.69	277.12
Johnson	0.80	17.07	3.53	56.94
Kearny	130.64	252.37	8.48	810.13
Kingman	0.00	48.48	7.86	213.53
Kiowa	0.00	96.14	7.07	314.27
Labette	4.31	25.92	2.68	84.81
Lane	26.25	183.97	10.23	506.74
Leavenworth	5.59	12.27	2.05	70.51
Lincoln	34.77	107.78	8.22	335.13
Linn	51.67	178.25	2.97	375.22
Logan	23.86	36.15	0.00	177.63

County	General Operation	Roads & Bridges	Health	Total Rate
Lyon	15.76	37.03	2.44	93.71
Marion	14.10	73.22	2.58	159.41
Marshall	11.51	27.80	2.26	122.47
McPherson	1.50	4.01	0.29	137.67
Meade	21.43	133.94	9.57	289.30
Miami	5.84	37.24	0.33	89.04
Mitchell	14.70	53.72	1.94	179.17
Montgomery	8.94	28.49	1.99	77.74
Morris	12.40	85.58	2.82	189.63
Morton	84.49	148.12	13.21	915.51
Nemaha	9.03	30.35	0.00	122.96
Neosho	8.16	29.33	1.61	95.32
Ness	19.80	165.55	6.43	362.30
Norton	4.80	0.00	2.12	197.07
Osage	12.36	17.75	1.67	87.82
Osborne	0.00	43.02	1.34	147.02
Ottawa	42.14	105.57	6.38	293.09
Pawnee	11.13	32.74	3.99	119.64
Phillips	5.63	77.62	4.02	249.75
Pottawatomie	77.42	114.25	4.09	233.25
Pratt	18.67	17.10	0.47	70.51
Rawlins	0.00	174.96	4.16	308.87
Reno	3.75	21.33	1.88	83.17
Republic	16.27	85.19	2.22	258.25
Rice	8.23	91.64	0.00	211.98
Riley	0.00	4.55	1.35	35.11
Rooks	30.58	157.24	3.28	346.64
Rush	39.28	125.59	0.00	319.13
Russell	15.99	69.55	3.94	199.40
Saline	0.00	19.79	2.63	68.16
Scott	0.00	7.30	0.41	20.73
Sedgwick	14.86	10.15	0.00	70.47
Seward	11.96	61.95	0.00	104.51
Shawnee	54.12	9.76	4.49	88.26
Sheridan	0.38	157.40	2.71	308.54
Sherman	19.56	33.59	5.59	186.91
Smith	19.62	73.84	2.86	213.52
Stafford	8.75	97.06	0.00	203.90
Stanton	10.12	19.81	0.00	58.66
Stevens	39.54	276.80	0.00	714.07
Sumner	10.90	39.13	1.91	143.57
Thomas	19.30	39.48	2.31	137.07
Trego	22.98	89.52	2.16	280.85
Wabaunsee	6.15	51.30	1.97	130.41
Wallace	3.87	26.10	0.71	53.22
Washington	5.11	39.64	3.26	170.48
Wichita	34.21	111.22	12.50	338.52
Wilson	19.64	74.77	1.88	152.80
Woodson	14.94	121.58	3.23	237.79
Wyandotte	24.62	6.33	2.56	86.58
Mean	18.30	77.41	3.17	216.89
Std. Dev.	22.33	74.43	3.48	180.88

Source: "1985 County Tax Rates for 1986," *Kansas Government Journal*, January 1986, pp. 18-19.

At this time, professional county management is more common in large urban counties. The size of budgets, number of departments, and scope of activities found in populated counties have necessitated greater management control. Nevertheless, rural counties may present comparable management problems. The difficulty and expense of providing basic services in rural counties may require professional management. This is a reform more Kansas counties should consider.

Consolidation

When confronted with the fact that Kansas has more than four thousand governmental units, many observers imagine consolidation to be the best and most logical response. Consolidation of governmental units implies more consistent delivery of service for more people, reduced overlap and conflict of duties, realization of economies of scale, and simplification of structure. Order is brought to the apparent chaos and fragmentation of local government.

Functional Consolidation

Several different types of consolidation exist. Functional consolidation refers to the merging of specific operations, procedures, and functions within an organization (internal consolidation) or between two or more governmental units (external consolidation). For example, a handful of cities have combined their police and fire departments into a single public safety department. An instance of external functional consolidation is the Riley County Police Department, which acts as law enforcement agent for all of Riley County.

In 1970 consolidation of Manhattan and Riley County law enforcement was first proposed. The goal was to improve the effectiveness and professionalism of county law enforcement. In 1972 the voters approved consolidation of the county sheriff's office and city police departments, and in 1974 the Riley County Police Department was created, and the separate forces of Manhattan, Ogden, Riley, Leonardville, and Riley County were abolished. The consolidation withstood a later recall effort, which was defeated by a bigger margin than the original consolidation had won.

The legislative authority for consolidation exists, and it allows Kansas governments a large measure of discretion in developing consolidation plans.

Officials of the Riley County Police Department report the following benefits of the countywide agency:

- reduction in political atmosphere, due to the non-elected nature of the police chief position;
- greater opportunities for training and professional development;
- elimination of overlapping jurisdictions and unification of 911 service, dispatching, purchasing, and jail facilities;
- reduction in per capita cost of law enforcement to the citizens of Riley County.

The Riley County example appears to be a case where both service and cost effectiveness have improved. A police department official noted that consolidation was possible because the community supported it. Citizens were able to look forward and envision the potential benefits, and they were willing to move beyond parochial politics and give up their original local police forces.

Organizational Consolidation

More far-reaching than functional consolidation is organizational consolidation, where two or more separate governmental units are combined into a single new unit. No examples of organizational consolidation in Kansas were discovered in the research, and few examples exist nationwide. Most notable but still imperfect is the consolidation of Indianapolis and Marion County, Indiana, into a county-wide body known as Unigov.

The Indianapolis case is well-known and widely admired, yet it is not a pure example of organizational consolidation. The Indianapolis and Marion County governments were consolidated by an act of the state legislature in 1969 to form a new government. Interestingly, the consolidation was made possible by the election of a Republican mayor in 1967 (Richard Lugar) and a GOP sweep of Marion County state legislature seats in 1968, rather than by approval of the voters at an election. A *Wall Street Journal* article describes the political reality of 1967:

> Special districts, which the elected county officials had little control over, intensified the fragmentation of responsibility and undermined citizen control of government . . . the newly elected mayor of Indianapolis recognized that even he lacked control over activities he was politically responsible for.[2]

Results of the unified government have been impressive. While most Frost Belt cities have been losing their population to the suburbs, Indianapolis has been able to revitalize its central core and act more like a single political community. Some of Unigov's accomplishments have been the merging of many agencies and service districts into departments controlled by the mayor; improved land use and service planning; and decrease in direct property tax rate for municipal services. Yet within the metropolitan area, three cities, nine townships, eleven school districts, and several special districts are excluded from Unigov. Marion County retains its elected officials of assessor, auditor, treasurer, sheriff, prosecutor, coroner, recorder, and surveyor.[3] Thus Unigov is not truly a comprehensive consolidation.

The applicability of the Unigov model to Kansas is questionable. First, the manner in which Unigov was created—through a state law promulgated by a dominant majority party—is of concern. Also, the need for metropolitan consolidation in Kansas is probably not as great as the need for better rural coordination; in this respect the problem of special districts in both the Unigov case and Kansas is comparable. Nonetheless, the Unigov case points out some of the benefits of consolidation, as well as illustrating that consolidation is usually not as complete and simple as it first appears.

No recent examples of county-county consolidation were uncovered in the research. In Kansas this topic may be worth further study for particularly sparsely populated counties providing identical or similar services.

Statutory Authority for Consolidation

Statutory authority for consolidation in Kansas is found in K.S.A. 12-3901, passed in 1974, which enables counties, townships, cities, school districts, and other taxing subdivisions created by the state (e.g., special districts) to consolidate operations for the purpose of improving efficiency and effectiveness. An article in the *Kansas Government Journal* sets out the requirements for enacting a consolidation:

- The governing body or bodies must first find by resolution that duplication exists and that operations can be more efficiently and effectively exercised.
- The body or bodies must designate an office or agency to perform the consolidated function and the time, form, and manner of implementation of the consolidation.
- Identical resolutions must be passed by each governing body for external consolidations.

Political costs of consolidation can be high, especially when traditional seats of local power, such as the county sheriff and mayor, are threatened.

Interlocal agreements can increase the probability of successful consolidation, reduce the uncertainties inherent in such mergers, and generate citizen support.

- Additionally, if the consolidation involves the elimination of an elective office, approval is required by a majority of the electors voting at an election called and held according to provisions of the general bond law (K.S.A. 10-120).

- An election is also required if a proposed consolidation is protested by 10 percent of the qualified electors in a petition.[4]

Thus, the legislative authority for consolidation exists, and it allows Kansas governments a large measure of discretion in developing consolidation plans. The difficulties and complexity of the consolidation process, however, partially explain why consolidation has not been a widespread or popular tool for improving local government operations.

Guidelines for Consolidation

The two cases presented prompt the question, "When is consolidation appropriate?" Since consolidation can produce unknown effects once concluded, its drastic nature causes many observers to be skeptical of its alleged benefits. An interesting case in point concerns a proposed merger of the public works departments in Topeka and Shawnee County. A study of the proposal by the Intergovernmental Cooperation Council found that departmental consolidation would not be beneficial but that consolidation of certain functions would. For example, consolidation of the city and county traffic and safety divisions was recommended, since unified control over traffic signs would increase uniformity and order in the county's sign system. Other functions, such as water pollution control and bridge maintenance, were not considered good candidates for consolidation, since their actual operations differed greatly in nature and scope.

Conversations with officials of the Intergovernmental Cooperation Council and a review of the literature suggest the following criteria for successful consolidation:

- performance of identical or highly similar operations in contiguous jurisdictions (for example, snow removal)

- clearly visible cost or service advantages that would result from merged operations

- similarly, existence of gross duplication and inefficiency in the performance of similar functions in separate jurisdictions

- operations that concern the sharing of information, services, or equipment across jurisdictional lines; for example, 911 systems, record-keeping, tax collection

- strong community interest in and support for consolidation

- for city/county mergers, the existence of a large, centrally located city in a county whose population lies geographically near the city.

Resistance to Consolidation

Several major factors inhibit consolidation. Especially significant are political concerns, since many small jurisdictions have long-time incumbent officeholders and a loyal community following of people who are anxious to retain their own power, identity, and individuality. Political costs of consolidation can be high, especially when traditional seats of local power, such as the county sheriff and mayor, are threatened.

Uncertainty over true benefits often plagues consolidation attempts. The exact consequences of a merger are not completely knowable in advance. Fear that the quality of service will decline in areas receiving excellent service are also common, since consolidation implies more uniformity of service delivery. Economies of scale may not exist if two unrelated functions are brought under one roof; bigger is not always better, even if it looks neater on an organizational chart. Citizens resist losing a government they are familiar with and identify with.

Nonetheless, consolidation can be beneficial, depending on the individual circumstances of each case. Consolidation should be seen as an important device for achieving better service and cost effectiveness in the long run, but it should be recognized that both political and economic costs can be high in the short run. Interlocal agreements can increase the probability of successful consolidation, reduce the uncertainties inherent in such mergers, and generate citizen support. Interlocal agreements can also be known as collaborative agreements or intergovernmental cooperation agreements. These instruments are discussed in the following section.

Intergovernmental Cooperation Agreements

Although less dramatic than consolidation efforts, intergovernmental cooperation agreements represent a significant and realistic means for improving the efficiency and effectiveness of local governments in Kansas. The trend toward increased interlocal cooperation may be seen as a response by local governments to factors like tax lids, rising costs, shrinking revenues, growing local demands, and expanding state and federal

Contractual agreements allow local units to develop specific methods for providing services economically without surrendering local autonomy and identity.

Increasing the effectiveness of Kansas local governments should begin with encouragement of interlocal agreements for service delivery.

mandates.[5] An important advantage of interlocal agreements is their flexibility: they can be formal or informal, written or unwritten, involve two jurisdictions or twenty, and last for six months or twenty years. While local agreements often involve routine operations and may not seem to represent reform, their usefulness for furthering the goals of reform, such as consolidation, should not be overlooked.

Statutory authority for interlocal cooperation is found in many state laws, but K.S.A. 12-2901, known as the interlocal cooperation statute, is most significant. K.S.A. 12-2901 "essentially permits any two or more local units to do cooperatively or jointly that which they are empowered to do separately."[6] The statute has been amended several times so that the purposes specified in the legislation have been expanded. Although local governments have a great deal of flexibility in devising collaborative agreements, written agreements entered into under K.S.A. 12-2901 must be reviewed by the attorney general to ensure their compliance with state laws.

Other statutes concerning interlocal cooperation concern specific functional areas, such as highways, public works, health, and recreation. The popularity of interlocal agreements is demonstrated by the thousands of examples in Kansas. The following is a sample of the types of agreements found within the state.

Examples of Cooperative Agreements

In Kearny County, Kansas, the sheriff also serves as the chief of police for the town of Lakin; Lakin pays the county an annual amount determined by contract. There is no duplication of effort, since Lakin does not have its own police department. Costs have been reduced, and the results have been satisfactory. This type of contract is common in western Kansas. While it resembles consolidation because of the sheriff's jurisdiction within the city, a new institution was not created, and Lakin retains the option of reestablishing its own agency when the contract expires.

Arkansas City, Kansas, and Winfield, Kansas, jointly own and operate Strother Airport/Industrial Park. Three members from each city commission act as the governing body; agricultural, utility, and oil and gas revenues make the airport self-supporting. Economies of scale are achieved, and a more attractive facility is possible because the two cities share the airport. Many city-county airports also exist in Kansas.

Overland Park and Lenexa, Kansas, have several agreements for the coordination of traffic lights on thoroughfares that run through both cities. Some lights are owned and operated by one city, while the other city pays expenses. While the agreements are not true examples of cost-saving service-delivery arrangements, they do illustrate the greater efficiency and cooperative attitude found in successful interlocal agreements.

Lawrence, Kansas, Douglas County, and the University of Kansas have a joint contractual agreement concerning investigation of arson cases. The agreement enables effective investigation of cases and avoids duplication of effort. Reciprocal agreements between fire departments are common also. For example, the City of Olathe has agreements with neighboring cities and fire districts; if additional firefighters are needed by other agencies, Olathe provides support, and vice versa, and if Olathe is closer to a fire in another jurisdiction than that jurisdiction's forces, Olathe will respond to it, and vice versa. Such agreements recognize and reduce service overlap rather than allow overlap to be an obstacle.

Interlocal agreements like these illustrate the variability of cooperative efforts among local governments. More importantly, the examples reveal that interlocal agreements represent hidden efficiencies within the tangle of overlapping local governments. Contractual agreements allow local units to develop specific methods for providing services economically without surrendering local autonomy and identity.

Furthermore, agreements can be viewed on a spectrum of local government action leading to consolidation. If consolidation is an ultimate goal, contractual agreements can pave the way. By consolidating delivery of one service or a few services, the benefits of combined service may be seen and documented, thus making consolidation easier later. For example, if consolidation of Lakin and Kearny County law enforcement agencies was a goal, the provision of police service by the County under the existing contract would reveal the advantages of having one agency provide the service. Consolidation thus becomes an evolutionary process, rather than an abrupt, all-or-nothing leap. Even though consolidations typically phase in their changes over time, a commitment to consolidate has been made before the benefits can be guaranteed. By beginning with contractual agreements, costs and benefits may be tested before a commitment to consolidate is made.

Increasing the effectiveness of Kansas local governments, then, should begin with encouragement of interlocal agreements for service delivery. While they are not as visible as consolidations, interlocal agreements provide a realistic, adaptable, and effective method for reducing inefficiencies, overlap, and uneven provision of services—problems that consolidations

The efficient and effective management of government services depends on developing local government structures that take advantage of economies of scale and provide government officials with information about how well services are delivered.

also attempt to eliminate. The circumstance-specific nature of local government agreements makes definitive statements about automatic cost savings impractical, but collaborative agreements typically involve reduced costs or better service for the same cost for each jurisdiction. Compared to consolidations, interlocal agreements are much easier to implement both legislatively and politically. Moreover, contractual agreements can be an end in themselves or a means to consolidation. The expanded and innovative use of interlocal agreements should be encouraged and promoted actively.

Conclusions: Toward Greater Efficiency

As stated in the introduction and reinforced by the descriptions, the major finding of this study is that the proliferation of local governments makes it extremely difficult to answer questions meaningfully about the quality and efficiency of services delivered to Kansans. The efficient and effective management of government services depends on developing local government structures that take advantage of economies of scale and provide government officials with information about how well services are delivered.

In the past, as counties and other forms of local government assumed new responsibilities the structure of government remained the same. Locally elected community leaders took on more and more managerial responsibility for public services. Nevertheless, few elected officials have either the time or expertise to manage local government services. Moreover, when new types of services were needed, additional governmental units or special districts were created. These trends added to the complexity of local government without increasing its management capabilities. Although it is not possible to link the variations in tax rate and service allocations directly to managerial problems in local government, the wide variation in the costs of local government suggests that great differences in the costs, quality, and availability of services exist in Kansas.

No one is more aware of the difficulty in local government than local government officials. Many communities have experimented with various reforms to improve the quality and efficiency of service delivery. These experiments are essential, given the growing expectations of citizens for improved community services at a time when resources are declining. All four types of reform—privatization, professionalization, consolidation, and cooperative agreements—deserve the attention of local governments.

Privatization, especially when accompanied with specified performance measures, can improve efficiency. For services that are considered too central to be delegated to private firms, efforts to introduce performance measures should be encouraged. Increasing the professional management of local governments also deserves serious attention. Although more common in urban counties, many of the management problems in rural counties require the skills of trained individuals who devote full time to community service.

In addition, local governments need to consider interlocal agreements as a routine, rather than extraordinary, solution for shared problems. The trend toward proliferation in local government should be reversed. The consolidation of specific services and, where realistic, of local governments will spread the costs and benefits of specific services over a larger population base. Consolidation also offers opportunities for improved management. Small governmental units often lack the resources to justify professional management. Breaking down artificial barriers that prevent local government from efficiently delivering services warrants the careful attention of officials at all levels of government.

Notes

1. This article is taken from a report prepared for Governor John Carlin in 1986. Kent Austin, Julia Dyson, and Roger Nelson, graduate students in Public Administration, assisted with the preparation of the original report.

2. Frederick C. Klein, "Indianapolis Thrives on Partnership of City, Business, Philanthropy," *Wall Street Journal*, July 14, 1982, pp. 1 and 20.

3. Frederick C. Klein, *Wall Street Journal*, July 14, 1982, p. 20.

4. League of Kansas Municipalities, "Intergovernmental Cooperation Statutes, *Kansas Government Journal*, December 1984, pp. 394-397.

5. League of Kansas Municipalities, "Interlocal Cooperation: Linking Resources to Public Needs," *Kansas Government Journal*, June 1978, pp. 207-227.

6. *Kansas Government Journal*, December 1984, pp. 394.

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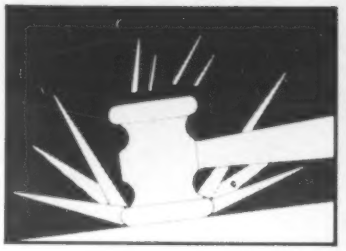
. . . the wide variation in the cost of local government suggests that great differences in the costs, quality, and availability of services exist in Kansas.

The Negative Impact of the Tax Reform Act of 1986 on Equity Investment Returns in Kansas



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After nearly two years of discussion and debate on several major tax reform proposals and many minor variations in those proposals, Congress passed the Tax Reform Act of 1986. The Act was designed to be revenue neutral, placing a heavier tax burden on the business sector, which would be offset by a lighter burden on individuals.

Within the business sector, however, the Tax Reform Act may penalize specific industries and regions and help others. This article summarizes the effects of the Act on investment in various industries and examines the industry composition of Kansas and the Plains Region of the United States. The purpose is to combine industry effects with industry composition to assess the impact of the Act on business investment in Kansas and the Plains Region.

Provisions of the Tax Reform Act of 1986

The Tax Reform Act of 1986 includes the following provisions:

1. reduction of marginal tax rates on business income;
2. elimination of the Investment Tax Credit;
3. reduction and extension of several tax credits of lesser importance, like the Research Tax Credit, Targeted Jobs Tax Credit, and the Nonconventional Sources of Fuel Credit; and
4. modification of depreciation schedules.

The Tax Reform Act of 1986 reduces business taxes through decreasing the number of corporate taxable income brackets from five to three and lowering the marginal tax rates. The top corporate tax rate is reduced from 46 percent to 34 percent, although a 5 percent additional tax on corporate taxable incomes greater than $100 thousand and less than $335 thousand creates a 39 percent marginal tax rate in that income range. Thus, the Act reduces the marginal and average tax rate on any level of corporate taxable income.

The investment tax credit is repealed, and investment tax credit carry-forward beyond 1986 is reduced. The 25 percent Research Tax Credit is extended for three years but reduced to 20 percent, and similarly, the Targeted Jobs Tax Credit is extended for three years but reduced from 50 percent of qualifying first-year wages and 25 percent of qualifying second-year wages to 40 percent of qualifying first-year wages, only. The Nonconventional Sources of Fuel Tax Credit, scheduled to expire at the end of 1985, is modified and extended through 1987.

The Tax Reform Act revises the Accelerated Cost Recovery System (ACRS). The number of personal property recovery classes is increased to six, and, in general, recovery periods are lengthened while recovery percentages are accelerated. The recovery periods are lengthened, in part, from redefining recovery classes, and in part, from extending the last half-year of recovery beyond the recovery period. Recovery percentages are accelerated by a faster writeoff, 200 percent of the declining balance with a straight line switchover, on most business assets.

Industry Effects

Most basically, the Tax Reform Act reduces business tax credits in exchange for lower tax rates. Thus, the effect of the Act on the profitability of business investment in an industry depends upon factors specific to the industry. The following industry-specific conditions negatively affect the firm under the Tax Reform Act: heavy reliance on depreciable assets, relatively low business income, and reliance upon tax credits modified by the Act. Similarly, industries with relatively high levels of business income and industries not qualifying for the tax credits reduced by the Tax Reform Act have the most to gain from the tax law change.

To determine the effects of the Tax Reform Act on the profitability of business investment to owners or common stock (equity) participants, a $1,000 investment is simulated in the former tax environment and under the new tax codes. The difference in tax impacts is determined for each of the eight basic industries: agriculture, mining, construction, manufacturing, transportation and public utilities, wholesale and retail trade, finance, and services. The industry-specific factors are captured by using the most recent industry-level balance sheet and income statement data from the Internal Revenue Service.

The profitability calculations assume that financial conditions not specifically addressed by the Tax Reform Act of 1986 would remain unchanged. For example, the fraction of the $1,000 investment funded from equity and the fraction funded from debt are unchanged. Similarly, distribution of investment among depreciable and depletable assets and working capital is held constant. And finally, the fractions of debt funding from interest-bearing and noninterest-bearing debt sources also remain unchanged. Thus, the calculations disregard any financial structure or other behavioral changes that the tax revision may induce. Profitability calculations do include industry factors that the Tax Reform Act specifically affects. These factors include depreciation rates, tax rates, and tax credits. Since the equity portion of the $1,000 investment differs by industry, the profitability of the investment cannot be measured in dollars only. Rather, the profitability is measured by a profitability index, which adjusts the dollar profitability for the equity investment necessary to earn the dollar return. That is, the profitability index measures the profitability of equity investment while reflecting the scale of the equity investment. Positive indexes reflect profitable industry investments while negative indexes reflect unprofitable investments.

Figure 1 shows the profitability of business investment, under the prior tax code and under the new law, by industry. The calculations assume a 5 percent rate of inflation and a 4 percent real rate of return.

Figure 1 reveals strikingly different impacts of the tax law change across industries. Profitability increases under the new tax climate for mining, construction, manufacturing, and services, while agriculture, transportation and public utilities, wholesale and retail trade, and finance suffer losses in investment profitability. Varying the inflation rate from 0 to 10 percent does not change the impact of the new tax law.

State and Regional Effects

The impact of changes in tax law on a given region vary according to industry composition within the region. The distribution of income derived from industries shown in Figure 2 is clearly different in Kansas than in the Plains Region or the United States. The income concentration in transportation and public utilities in Kansas and the Plains Region far exceeds that of the nation, but Kansas and the region have smaller proportions of services and manufacturing. Wholesale and retail trade and the finance industry are comparable for Kansas, the Plains Region and the United States. The figure also

Figure 1
Profitability of Business Investment, by Industry

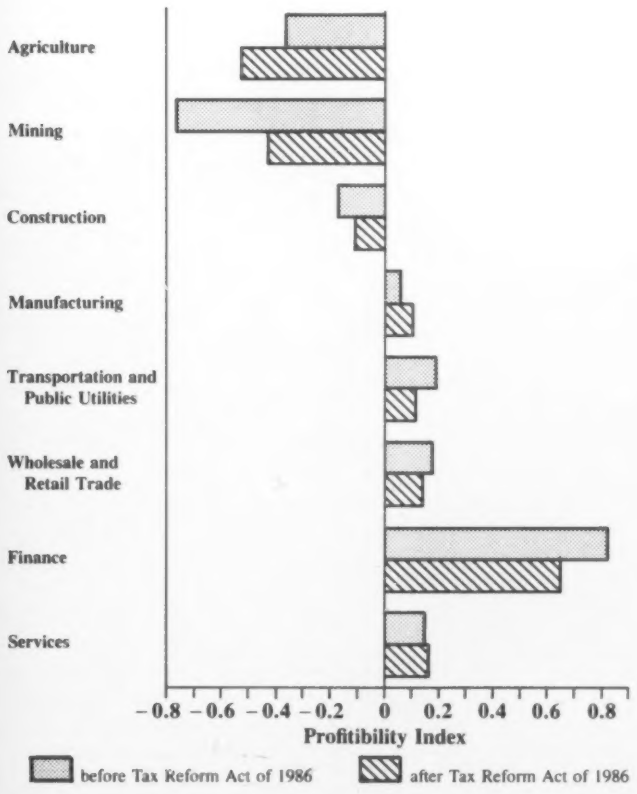
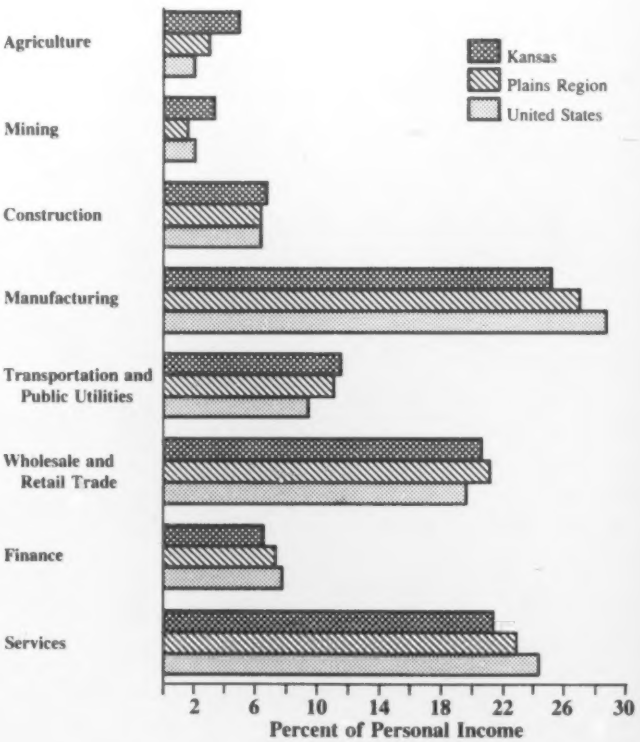


Figure 2
Personal Income, Industry Composition (percent)

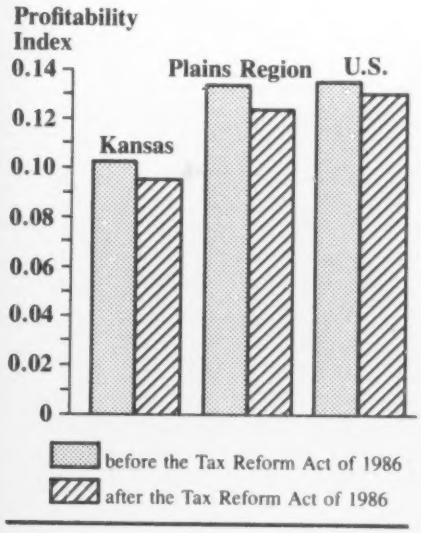


The Tax Reform Act reduces equity investment profitability in Kansas relatively less than in the Plains Region and somewhat more than in the United States.

reveals, as expected, the dominance of agriculture and mining in Kansas and the Plains Region as opposed to the country as a whole.

To examine the impact of the Tax Reform Act on Kansas and the Plains Region, the industry profitability effects shown in Figure 1 are weighted by the industry compositions shown in Figure 2. The industry-weighted impact of the Tax Reform Act of 1986 is depicted in Figure 3.

Figure 3
Impact of the Tax Reform Act of 1986 on Profitability of Business Investment



The profitability of business investment in Kansas under the old laws was lower than that of the Plains Region or the United States. Although the Tax Reform Act reduces equity investment profitability in Kansas relatively less than in the Plains Region and somewhat more than in the United States, the profitability of an average equity investment in Kansas is still lower than that of either the Plains Region or the United States.

The impacts shown in Figure 3 assume a 5 percent rate of inflation, and again, may differ for other inflation rates. Under either tax code, higher inflation reduces profitability. The Tax Reform Act reduces profitability of equity investments in Kansas, the Plains Region and the United States under each inflation rate (zero percent, 5 percent, and 10 percent). The conclusions from Figure 3 (based upon a 5 percent inflation rate) are insensitive to inflation rate changes. Kansas and the Plains Region do better under the former laws no matter which inflation rate is assumed.

Conclusions

The Tax Reform Act of 1986 reduces the profitability of equity investments in most industries. Since the reduction is different for different industries, the Act is not industry-neutral. The profitability of an average equity investment in Kansas is reduced by about 0.5 percent. Due to relativ 'y high concentrations of industries unfavorably affected by the Act, the Plains Region will fare worse than Kansas, and Kansas will fare worse than the nation. Thus the business investment climate of Kansas will improve compared with the regional climate and worsen compared with the United States.

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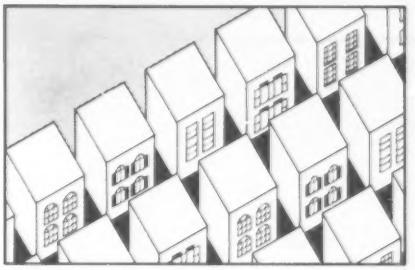
Due to relatively high concentrations of industries unfavorably affected by the Act, the Plains Region will fare worse than Kansas, and Kansas will fare worse than the nation.

Of Special Interest to the Small Business Owner and Operator . . . *



Kansas Industry Growth: 1974-1984

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In the Winter issue of the *Kansas Business Review* we outlined our findings concerning the number of Kansas small business establishments, their employees and payroll. Our definition of small business includes 99 percent of Kansas establishments. The analysis showed that on average, growth rates in the number of small business establishments and in small business payroll and employment were close to national rates. In fact, the differences between ten-year average growth rates for Kansas and the United States were not large enough to be statistically significant.

Next we will examine the growth rates for nine industries, comparing Kansas, the region, and the nation. The major industries are agricultural services, mining, construction, manufacturing, transportation, wholesale trade, retail trade, finance, and services. Midwestern comparison states are Colorado, Oklahoma, Missouri, and Nebraska.

Establishments

As Table 1 shows, in Kansas the number of firms in agricultural services and in transportation grew the most (6.33 percent), but the number of firms grew in every industry in Kansas, in the United States, and in the other midwestern states. The two Kansas industries with the slowest growth in the number of firms were wholesale trade and retail trade, which grew less than 1 percent a year during the ten-year period. This rate was substantially below the U.S. average. The number of firms in three industries grew faster in Kansas than it did in the United States: agricultural services, mining, and transportation.

If we look at growth in the number of establishments by industry and compare Kansas with the four other midwestern states, we find that Kansas ranked first in transportation and third in agricultural services, mining, manufacturing, wholesale trade, retail trade, finance, and services. For growth in the number of construction businesses, Kansas ranked fourth, ahead of Nebraska, but behind the other states. As Table 1 shows, Kansas usually ranked behind Colorado and Oklahoma but ahead of Missouri and Nebraska. This is consistent with our findings in the previous article, where we found that between 1974 and 1984 growth in Kansas was faster than in Missouri and Nebraska and slower than Colorado and Oklahoma.

Employees

Between 1974 and 1984, employment in all major Kansas, Colorado, and Oklahoma industries grew. In the United States, Missouri, and Nebraska, however, manufacturing employment decreased slightly. As the table shows, Missouri lost mining jobs, and Nebraska lost jobs in the transportation industry.

Employment in mining, which includes oil and gas production, grew faster than in any other Kansas industry between 1974 and 1984. The slowest employment growth in Kansas was in construction.

In terms of employment growth rates, four out of nine Kansas industries outperformed the United States as a whole: mining, manufacturing, transportation, and finance. Wholesale trade was the only Kansas industry to substantially underperform the United States.

Compared with Colorado, Oklahoma, Missouri, and Nebraska, employment growth rates in Kansas ranked first in transportation and second in services (after Oklahoma) and manufacturing (after Colorado). Kansas employment growth ranked third in mining, retail trade, and finance. In construction, wholesale trade, and agricultural services, Kansas employment growth ranked fourth, followed by Nebraska.

* This article is sponsored by the U.S. Small Business Association and the Kansas Small Business Development Centers.

Table 1
Industry Growth, 1974-1984
Average Annual Percent Change

Establishments

	KS	US	CO	OK	MO	NE
Ag. Services	6.33	5.11	9.66	9.20	4.96	4.20
Mining	5.26	4.52	9.30	8.57	0.22	0.87
Construction	1.95	2.30	5.27	3.28	2.81	0.80
Manufacturing	1.28	2.02	4.39	2.33	0.61	0.63
Transportation	6.33	3.25	6.10	3.98	2.55	1.95
Wholesale	0.86	2.03	3.95	2.30	0.75	0.12
Retail	0.86	1.80	3.65	1.89	0.77	0.61
Finance	2.65	2.78	5.30	3.89	1.27	2.18
Services	3.51	4.44	6.31	4.43	3.46	2.26

Employment

	KS	US	CO	OK	MO	NE
Ag. Services	5.79	6.27	10.72	10.96	6.74	5.07
Mining	6.41	4.07	9.80	11.86	−2.96	3.80
Construction	0.60	0.94	3.25	0.80	0.97	0.26
Manufacturing	1.10	−0.36	3.60	0.68	−0.60	−0.25
Transportation	3.75	1.50	3.14	2.75	1.62	−0.37
Wholesale	1.27	3.08	3.63	2.67	1.39	1.00
Retail	2.34	2.68	3.88	3.42	1.62	1.15
Finance	3.62	3.03	5.31	4.24	2.11	3.10
Services	4.69	5.10	2.15	4.97	4.31	4.02

Payroll

	KS	US	CO	OK	MO	NE
Ag. Services	12.77	12.23	18.59	20.81	12.92	11.20
Mining	15.85	12.90	19.57	21.76	4.57	10.73
Construction	6.88	7.15	9.81	7.95	7.77	6.10
Manufacturing	9.90	7.78	12.75	9.94	7.36	7.89
Transportation	12.41	9.34	11.08	11.50	9.40	7.90
Wholesale	8.99	9.10	10.66	10.97	8.12	7.73
Retail	8.95	8.78	10.92	10.40	7.72	6.97
Finance	11.63	11.62	14.35	13.58	10.56	11.44
Services	13.63	13.37	15.59	14.40	12.69	13.08

Source: Bureau of the Census, *County Business Patterns*, 1974 through 1984.

Payroll

Payroll grew in every industry in Kansas, the United States, Colorado, Oklahoma, Missouri, and Nebraska between 1974 and 1984 (Table 1). In Kansas, mining payroll grew fastest, followed by services. The Kansas industry where payroll grew most slowly was construction, where growth averaged 6.88 percent.

Payroll grew faster in Kansas than in the United States in seven out of nine industries. The two industries where payroll did grow more slowly in Kansas than in the United States were construction and wholesale trade, and they each trailed by less than a third of a percent.

Transportation industry payroll grew faster in Kansas than in the other midwestern states. In manufacturing, mining, wholesale trade, retail trade, finance, and services, Kansas payroll grew more rapidly than payrolls in Missouri and Nebraska, and more slowly than those in Colorado and Oklahoma. In agricultural services and construction, payroll grew faster in Kansas than in Nebraska, but more slowly than in the other midwestern states.

Conclusions

Between 1974 and 1984, the people of Kansas were able to consistently create small business establishments, employ more people, and pay their employees higher wages in every major industry. The transportation sector grew more rapidly in Kansas than in any of the other midwestern states, whether we look at payroll, number of firms, or employment measures. In most other industries, Kansas lagged behind Colorado and Oklahoma, but during the ten-year period of study, industries in these states outperformed the U.S. averages.

Kansas industries consistently lagged behind Colorado and Oklahoma, but during the ten-year period of study, industries in these states outperformed the U.S. averages.

Economic Outlook

Introduction

The Kansas economy had a moderately good year in 1987, and 1988 will be similar. Nationally, consumer confidence has rebounded from the shock of the October stock market crash, and the U.S. economy will be driven by business purchases of plant and equipment in 1988. These are the main themes of the forecasts produced this quarter at the Institute for Public Policy and Business Research at the University of Kansas.[1]

The national forecast is based on the following major assumptions:

1. After rebounding strongly in the first quarter of 1988, real consumer spending will exhibit sustained but moderate growth throughout the year.
2. After two years of no growth in nonresidential fixed investment, firms in many industries will be facing capacity constraints. In order to relax these constraints, firms will increase investment spending significantly in 1988, especially early in the year.
3. The Federal Reserve Board will target money supply growth between 4 percent and 8 percent for M2 and allow interest rates to vary with market forces. The actual growth rate of M2 will be near 5 percent.
4. Spending reductions passed by Congress at the end of 1987 will contribute to a reduction in the federal budget deficit this year.
5. Oil supplies will be plentiful on the world market, and world oil prices will increase 4 percent in 1988.
6. Economic growth in the rest of the O.E.C.D. nations will slow to slightly under 1.4 percent in 1988.

National Forecast

Given these assumptions, GNP will continue to grow moderately this year; we expect GNP to grow 2.8 percent, nearly matching 1987's rate of 2.9 percent. Figure 1 shows the quarterly growth patterns for GNP.

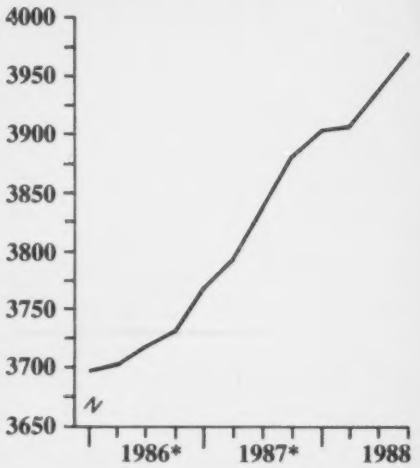
In a change from recent U.S. economic trends, stimulus to the economy will come not from consumer spending growth or from growth in exports relative to imports, but from increased capital expenditures by firms. Between 1983 and 1986, real consumption spending in the United States grew more than 4 percent each year. Then last year real consumption grew only 1.9 percent; an annual growth of 3.7 percent for the second and third quarters of the year was tempered by reductions in real consumption spending in the first and fourth quarters. During the first quarter, however, a $16.1 billion improvement in the real trade deficit more than offset a $4.6 billion drop in real consumption spending. In the fourth quarter, when consumption spending decreased $16.1 billion, nonfarm business inventories increased $39.4 billion. Thus real GNP in 1987 grew 2.9 percent, the same as it had in 1986, in spite of the significant reduction in the growth of real consumption for the year.

This year consumption spending will continue to grow at a rate of 1.9 percent. Strong first quarter consumption growth, reported to be 3.8 percent, indicates that consumers have regained the confidence they lost during the October stock market crash. Consumer spending grew faster in the first quarter of 1988 than it did before the October crash, but during the remaining quarters of this year consumer spending growth will fall to a modest 2.1 percent as consumers begin to take some account of their large accumulation of debt.

The main source of growth in 1988 will be capital expenditures by firms. The level of nonresidential fixed investment has not grown during the past two years. Last year it was $448.3 billion, $5.8 billion below its 1985 level, and in 1986 it was only $443.8 billion. As a result many industries, notably paper, chemicals, metals, and textiles, are operating at or near full capacity. In many of these industries, in particular paper and metals, the weakened dollar and consequent improved position relative to foreign producers has strengthened demand. Firms will respond to this combination of strong demand and a high rate of capital utilization by investing in capital equipment. Real nonresidential fixed investment grew at an annual rate of 21 percent in the first quarter of 1988 and will grow slightly from this new higher level throughout the year. The forecast for 1988 is for a 9.4 percent increase in real investment spending.

Not all of this investment spending will be for goods and services produced in the United States; a significant portion will be spent on imports of capital equipment from abroad, which will increase the rate of import growth for 1988. Consequently, reduction of the trade deficit will be smaller than expected. In the first quarter of 1988, real net exports stood at minus $132.2 billion, down only $3.6 billion

Figure 1
Gross National Product Forecast (in billions of dollars)



* Historical data are provided for 1986 and 1987.

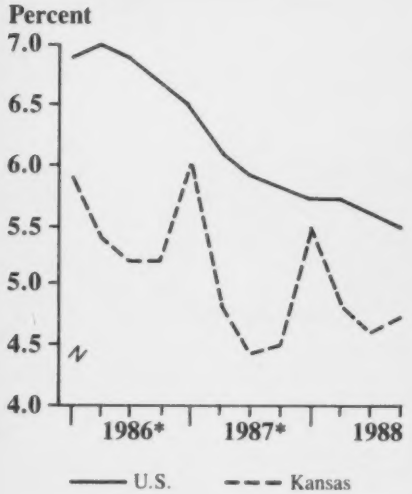
Source: Bureau of Economic Analysis, *Survey of Current Business*, Table 1.2.

from the fourth quarter of 1987. For the year, real exports will grow 12.3 percent to $478.7 billion, while real imports will grow 7.6 percent to $603.8 billion, producing a trade deficit of $125.1 billion, a slight improvement over the $135.5 billion trade deficit for 1987.

Total government purchases will increase by 1.3 percent in 1988. State and local government purchases of goods and services will grow 2.9 percent, while federal purchases will increase by only 1.1 percent this year. Nondefense purchases fell $16.5 billion in the first quarter of 1988 and are expected to fall by 2 percent this year. Defense purchases fell $2.4 billion in the first quarter, but they will increase by 2 percent during 1988. In spite of moderate increases in real federal government spending, a surprisingly small increase in revenues means that the federal budget deficit will be reduced only slightly to $145.6 billion, down from $151.7 billion in 1987.

Continued economic growth in the nation will show up as employment growth as well as in growth in the national accounts. Civilian employment will grow 2.4 percent, only slightly lower than 2.6 percent growth in 1987. With the civilian labor force growing only 1.9 percent, the U.S. unemployment rate will decrease in 1988. For the year, the unemployment rate will be below 5.7 percent as compared to the 1987 rate of nearly 6.1 percent. The quarterly pattern of the unemployment rate forecast is shown in Figure 2.

Figure 2
Forecasted Unemployment Rates, U.S. and Kansas



* Historical data are provided for 1986 and 1987.

Source: U.S. Congress, Joint Economic Committee, *Economic Indicators*, p. 12; Kansas Department of Human Resources, *Labor Market Summary*.

Inflation will increase from 3.7 to 3.9 percent in 1988 (Table 1). The relatively large increase in the first quarter reflects increased consumer spending in that quarter. For the rest of the year, slower growth in consumer spending will reduce inflation, although some inflationary pressure will be felt toward the end of the year when inventories are reduced to a more normal level, and the buffering effect of unusually high inventory stocks diminishes.

Moderate inflation and reductions in the federal budget deficit will keep interest rates from growing substantially in spite of the large increase in investment spending by firms. On average, interest rates will be up about one-fourth of a percentage point from their 1987 levels. This increase will come in the second half of the year when continued high levels of economic activity come up against a very moderate growth in the stock of money. The quarterly pattern of interest rates for 1988 is shown in Figure 3.

Nominal U.S. personal income will grow 7.1 percent in 1988 as compared with 6 percent in 1987 (Figure 4). Real personal income, measured by deflating nominal figures by the personal consumption deflator, will grow by 2.9 percent. Real disposable income will grow 2.6 percent, which is greater than consumption spending's 1.9 percent increase. The difference will be reflected in an increase in the savings rate from 3.8 percent in 1987 to 4.4 percent in 1988.

Kansas Forecast

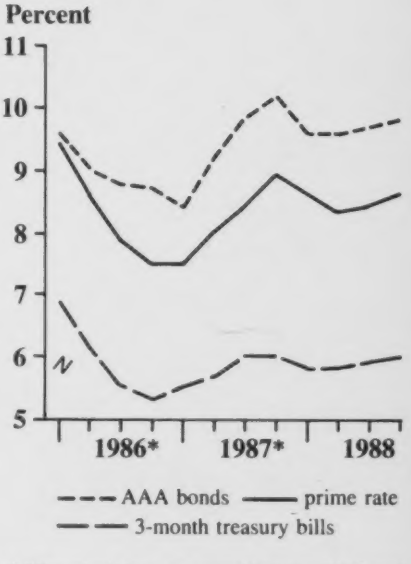
The past year was a relatively good year for the Kansas economy, judging from the performance of the economic indicators in Table 2. The Kansas Econometric Model's forecast of these same variables, also shown in Table 2, indicates that 1988 should be similar to 1987. During 1987, the growth rate of employment in Kansas was greater than the growth rate of the civilian labor force, so unemployment decreased from 6 percent in the first quarter to less than 4.5 percent in the third and fourth quarters. Since the employment data in Table 2 are not seasonally adjusted (the personal income data are seasonally adjusted), a clearer picture of the pattern of change throughout the year emerges by comparing a particular quarter of one year with that

Table 1
Rate of Inflation—U.S.

	Q1	Q2	Q3	Q4
1986*	1.6	−1.3	2.4	2.7
1987*	5.3	4.9	3.9	3.6
1988	4.1	3.5	3.7	3.9

*Historical data are provided for 1986 and 1987.
Source: Bureau of Labor Statistics, *CPI Detailed Report*.

Figure 3
Forecasted Interest Rates



* Historical data are provided for 1986 and 1987.

Source: U.S. Congress, Joint Economic Committee, *Economic Indicators*, p. 30.

same quarter in the previous year. This comparison, shown in Table 3, indicates that the number of unemployed declined in each of the last three quarters of 1987. This trend will continue into the first quarter of 1988. In the second quarter, however, the trend is expected to reverse, and in the last two quarters the number of unemployed will increase substantially. The unemployment rate for the year is forecast to be the same as for 1987, 4.9 percent. The difference between the two years is that 1987 started weakly and finished strongly, while 1988 is expected to start strongly and finish weakly.

Analyzing the personal income data and forecasts in Table 2 is more complex because no measure of the rate of inflation for Kansas is available. Kansas personal income grew 5.1 percent in 1987, and it will grow 6.7 percent in 1988. If we arbitrarily assume that inflation in Kansas equals the national rate, we can deflate nominal personal income using U.S. price indexes. Using the Personal Consumption Deflator, a variable weight index, we get a measure that suggests that real Kansas personal income grew 1 percent in 1987 and will grow 2.4 percent in 1988. Using the Consumer Price Index, a fixed weight index, we get a measure that suggests real Kansas personal income grew 1.4 percent in 1987 and will grow by 2.6 percent in 1988. These two measures indicate real personal income in Kansas will grow from 1.2 to 1.4 percent faster in 1988 than it did in 1987.

Table 2 presents a snapshot of the Kansas economy. A brief historical review of the patterns that the Kansas economy has followed since 1960 will lend some perspective to the economic performance of Kansas in 1987 and the forecast for 1988. Before the historical review two issues will be discussed: 1) the separation of farm and nonfarm sectors of the Kansas economy and 2) the choice of appropriate indicators for the historical review.

The Kansas nonfarm economy closely follows the national business cycle, and nonfarm sectors that diverge from the national cycles are responding to identifiable economic phenomena. On the other hand, the Kansas farm economy has behaved quite differently from the nonfarm economy, responding to noneconomic factors such as weather, trade policy, and national farm policy.[2] In fact, the Kansas farm economy has had a counter-cyclical pattern at times. Therefore, in order to identify economic cycles in Kansas and their relation to the national economy, it is best to concentrate on nonfarm measures.

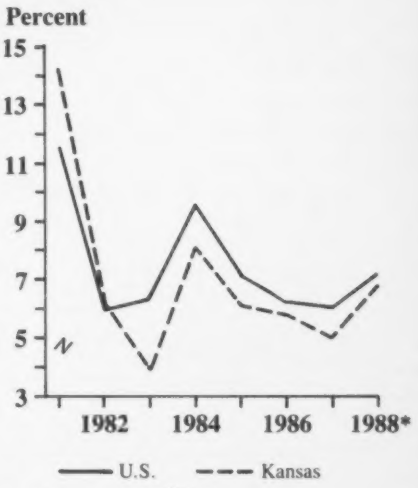
As we have written above, there is no good measure of real personal income for Kansas that is comparable to U.S. figures. The problem with using total employment measured by place of residence to measure economic performance is that these data include estimates of self-employed persons and of farm employment. Both these numbers are difficult to estimate without extensive census-like surveys.

The most accurate numbers for total employment are for total nonagricultural wage and salary employment by place of work. Since these estimates come from forms that businesses fill out for the U.S. Department of Labor, they are relatively accurate, Kansas data are comparable to national data, and both U.S. and Kansas data are comparable historically. Although they do not include self-employed people or farm workers, they account for more than 80 percent of estimated total Kansas employment. Thus, for the purposes of historical analysis, the best indicator of the performance of the Kansas economy is total nonagricultural wage and salary employment by place of work, which we will refer to as *employment*.

Nonagricultural Wage and Salary Employment

The graph of U.S. and Kansas employment in Figure 5 shows that Kansas economic history since 1960 can be divided into three periods. From 1960 to 1969 the U.S. economy (as measured by employment) grew more rapidly than the Kansas economy. The annualized growth rate in Kansas for that period was 2.3 percent, while for the United States it was 3 percent. From 1969 to 1979 the roles were reversed and Kansas grew more rapidly than the nation. Kansas employment grew 3.3 percent, and U.S. employment grew 2.5 percent. The roles were reversed again from 1979 to 1987 when U.S. employment grew at an annualized rate of 1.6 percent, while Kansas grew 0.7 percent. The turning points, 1969-1970 and 1979-1980, were each the

Figure 4
Personal Income Growth, U.S. and Kansas



* Forecast

Source: Bureau of Economic Analysis, *Survey of Current Business*, Table 1.9 and Table 1.

Table 2
Kansas Forecast

	Q1	Q2	Q3	Q4
Civilian Labor Force (Thousands)				
1986*	1211.9	1247.1	1237.4	1247.6
1987*	1238.4	1278.2	1274.9	1276.4
1988	1268.1	1311.3	1314.4	1299.6
Total Employment (Thousands)				
1986*	1139.9	1180.3	1173.3	1182.5
1987*	1164.4	1217.0	1219.0	1219.6
1988	1198.2	1248.5	1253.4	1238.1
Number of Unemployed (Thousands)				
1986*	72.0	66.7	64.2	65.1
1987*	74.1	61.2	55.9	56.8
1988	69.9	62.8	61.0	61.6
Personal Income (Millions)				
1986*	34,608	36,211	36,114	37,233
1987*	37,154	37,498	37,748	39,093
1988	39,362	40,118	40,716	41,438

*Historical Data are provided for 1986 and 1987.

Source: Kansas Department of Human Resources, *Labor Market Summary*. Bureau of Economic Analysis, *Survey of Current Business*, Table 1.

Table 3
Kansas Outlook—Summary Table
(Rate of change from same quarter of previous year)

	Q1	Q2	Q3	Q4
Civilian Labor Force				
1986*	0.2	−0.6	−0.6	0.4
1987*	2.2	2.5	3.0	2.3
1988	2.4	2.6	3.1	1.8
Total Employment				
1986*	−0.2	−1.3	−1.0	0.1
1987*	2.1	3.1	3.9	3.1
1988	2.9	2.6	2.8	1.5
Unemployed				
1986*	4.7	11.5	9.4	7.2
1987*	2.9	−8.2	−12.9	−12.7
1988	−5.7	2.5	9.1	8.3
Personal Income (Millions)				
1986*	3.6	6.9	6.3	6.3
1987*	7.4	3.6	4.5	5.0
1988	5.9	7.0	7.9	6.0

*Historical data are provided for 1986 and 1987.

Source: Kansas Department of Human Resources, *Monthly Labor Report.* Bureau of Economic Analysis, *Survey of Current Business.*

end of a long expansion and the beginning of a recession.

The years from 1979 to 1987 are easily separated into two sub-periods. The first sub-period, from 1979 through 1982, is dominated by two recessions: the first during the first half of 1980 and the second during the second half of 1981 and all of 1982. The second recession was the more severe, with the national unemployment rate reaching above 11 percent in the fourth quarter of 1982. During this period, the Kansas unemployment rate never went above 7.5 percent in any quarter, but employment decreased more in Kansas than it did nationally. Figure 6 shows the quarterly plot of the rate of change from one year to the next of Kansas and U.S. employment. Neither of the original series was seasonally adjusted. As Figure 2 shows, even after the second recession Kansas growth has been lower than U.S. growth. This phenomenon continued into 1987, with Kansas employment growing 1.5 percent and U.S. employment growing 2.5 percent. Our forecasts indicate that the same trend will continue into 1988; employment growth will be 1.7 percent in Kansas and 2.7 percent in the United States.

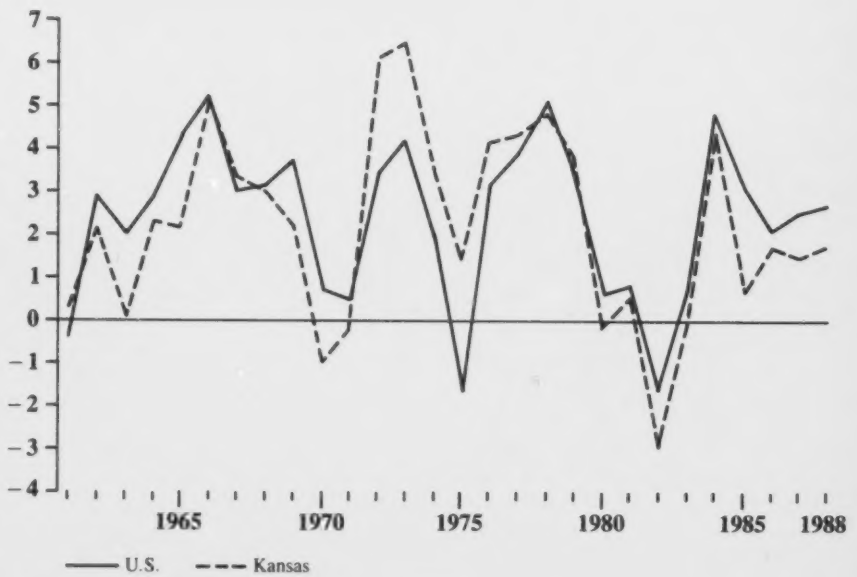
Mining

We turn now to the forecasts of several of the major sectors of Kansas nonagricultural wage and salary employment. The mining sector is expected to turn around in 1988 after a severe slump that began in 1982. From 1982 to 1987, mining employment in Kansas fell at an annual rate of 9.4 percent, due to the drastic drop in oil prices. Beginning in 1973, the price of oil began to move more erratically and, as a result, Kansas employment in mining varied significantly during the period. Oil prices play a dominant role in determining Kansas mining employment because 87 percent of Kansas mining employment is in oil and natural gas extraction, compared with 57 percent nationally. Our assumption of a moderate increase in oil prices results in an expected 6.1 percent increase in mining employment.

Manufacturing

Employment in the manufacture of nondurable goods is expected to increase 2.4 percent in 1988 after having grown only 0.6 percent in 1987. Historically, this sector has performed better in Kansas than in the United States. Since 1979, U.S. employment in nondurable goods manufacturing has fallen at an annual rate of 0.6 percent compared with increases at an annual rate of 0.9 percent in Kansas. The two largest groups of firms within this sector in Kansas, food and kindred products and printing and publishing, represented 64 percent of Kansas nondurable goods manufacturing employment but only 38 percent of U.S. nondurable goods employment in 1987. Printing and publishing has grown in Kansas since 1979, but not at the rate it has nationally. The cause for Kansas nondurable goods manufacturing's positive performance since 1979 has been food

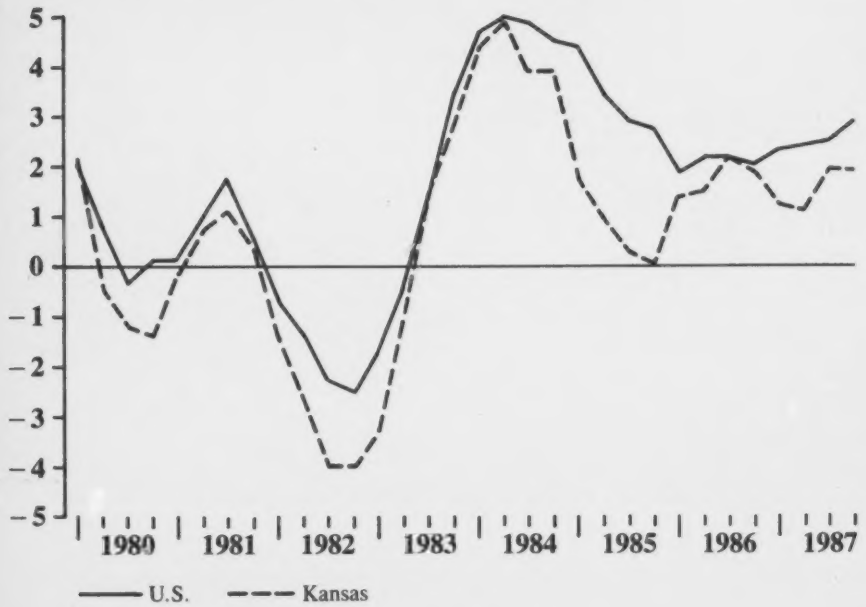
Figure 5
Employment,* U.S. and Kansas
(Rate of Change from One Year to the Next)



* Total Nonagricultural Wage and Salary Employment

Source: Bureau of Economic Analysis, *Survey of Current Business.*
Kansas Department of Human Resources, *Labor Market Summary.*

Figure 6
Employment,* U.S. and Kansas
(Rate of Change from Same Quarter of Previous Year)



* Total Non-agricultural Wage and Salary Employment

Source: Bureau of Economic Analysis, *Survey of Current Business.*
Kansas Department of Human Resources, *Labor Market Summary.*

and kindred products' annual growth of 2.5 percent. In 1988 printing and publishing employment is expected to grow 3.2 percent, and food and kindred products employment is expected to grow 2.7 percent.

On the negative side, Kansas is expected to continue losing employment in petroleum refining. When oil prices skyrocketed in the late 1970s and early 1980s, engineers designed more efficient refineries that made the old refineries obsolete. Some Kansas refineries, decades old, were closed. On average, employment in petroleum and petroleum products has fallen 8.3 percent a year since 1981. We expect it to fall another 4.5 percent in 1988.

Since 1979, durable goods manufacturing in Kansas has fallen on hard times. During the 1960s and 1970s, the durable goods industry performed better in Kansas than nationally. Since the 1980s, however, Kansas employment in durable goods manufacturing has declined 3 percent per year, while U.S. employment in durable goods manufacturing has declined 1.6 percent.

More than 70 percent of Kansas durable goods manufacturing employment is concentrated in transportation equipment (aircraft and autos) and electric and electronic machinery. Since 1979 transportation equipment employment has fallen 2.1 percent per year, and electric and electronic machinery employment has fallen 3.8 percent a year.

The transportation equipment industry is a major source of demand in Kansas for electric and electronic equipment, so a forecast of the electronic and electric machinery industry depends somewhat on the forecast of the transportation equipment industry. The gradual reduction of auto employment in Kansas City, Kansas, has left aircraft construction with about 90 percent of transportation equipment employment. The major sources of aircraft demand are defense requirements and corporations. Our assumptions that in real terms defense expenditures will be up slightly and that corporate profits will be down slightly in 1988 results in a forecast of almost no change in transportation equipment manufacturing employment in 1988.

Although the transportation equipment manufacturing sector is not growing, increases in nonresidential fixed investment will help the electric and electronic equipment industry; nearly all of the first quarter 1988 increase in investment was spent on equipment. Our forecast is for a

Table 4
Forecasted Kansas Employment**
(Rate of change from same quarter of Previous year)

	Q1	Q2	Q3	Q4
Nonagricultural Wage and Salary Employment				
1986*	1.5	1.5	2.1	1.9
1987*	1.2	1.1	1.9	1.9
1988	2.1	1.9	1.7	1.1
Nondurable Employment Manufacturing				
1986*	1.7	2.1	1.0	−0.3
1987*	−0.9	−0.1	1.0	2.3
1988	3.1	2.4	2.3	1.7
Durable Manufacturing Employment				
1986*	0.2	−0.4	2.0	0.2
1987*	−1.8	−0.6	0.2	1.5
1988	2.6	1.7	0.8	1.3
Wholesale Trade Employment				
1986*	−1.2	−0.1	0.0	0.7
1987*	0.7	0.5	1.5	2.5
1988	3.4	3.0	2.0	0.2
Retail Trade Employment				
1986*	1.6	2.9	2.9	3.1
1987*	2.1	0.8	1.2	1.9
1988	1.9	2.8	3.0	2.4
Services Employment				
1986*	3.8	4.4	4.3	4.1
1987*	3.9	3.4	3.2	3.7
1988	3.2	2.9	3.0	1.7

*Historical data are provided for 1987 and 1988.
**Total nonagricultural wage and salary employment

Source: Kansas Department of Human Resources, *Labor Market Summary.*

3.3 percent increase in electric and electronic machinery employment in 1988. Overall, we expect durable goods manufacturing employment to increase 1.6 percent in 1988.

Wholesale Trade

Employment in Kansas wholesale trade grew strongly in the 1960s and 1970s, particularly during the 1970s. Since 1979, however, employment in Kansas wholesale trade has only grown at about 1 percent per year compared with 1.5 percent nationally, reflecting the slowing down of the Kansas economy from its fast pace of the 1970s. Increased economic activity in Kansas during the past two years has generated some momentum for the wholesale trade industry: employment in this sector grew 1.5 percent last year, and we expect 2.1 percent growth this year.

Services and Retail Trade

Kansas employment statistics reflect a gradual transition from a goods producing to a service oriented economy, a transition the nation has been going through for decades. The retail trade and services sectors have consistently increased their employment since 1960. Since 1979, however, employment growth in these two sectors has been slower than in nation as a whole. From 1979 to 1987, retail trade employment grew at an annual rate of 1.6 percent in Kansas and 2.5 percent in the nation; and services employment grew 2.3 percent in Kansas and 4.4 percent in the nation. These growth rate differentials reflect the damage done to the Kansas economy by the recessions of 1979 and 1982-1983. In 1987 retail trade employment grew 1.5 percent in Kansas, and services employment grew 3.6 percent. We expect retail trade employment growth to jump to 2.5 percent in 1988, while service employment declines 2.6 percent.

Other Sectors

Of the other major sectors that make up Kansas employment, all but one are forecast to remain at about their 1987 levels during 1988. Employment levels in government, construction, and transportation and public utilities are expected to be unchanged in 1988. A slight increase in state and local government employment will offset a slight decrease in federal government employment. Employment in finance, insurance, and real estate will increase 1.4 percent, less than half of its 3.1 percent increase in 1987.

This sectoral analysis of Kansas employment points to one trend. Since the 1979-1982 recession (for Kansas the period is more like one long recession than two recessions separated by a year of growth), employment has grown in most sectors. Two exceptions are mining and durable goods manufacturing.

Norman Clifford, Director of the Kansas Econometric Model

Robert Glass, Research Associate

Institute for Public Policy and Business Research

Notes

1. The forecasts of the national economy are produced by the Indiana Econometric Model Project using assumptions generated at the Institute. Directors of the Indiana Project are R. Jeffery Green and Morton J. Marcus. The Kansas forecasts are produced by the Kansas Econometric Model, which is being developed at the Institute.

2. See Richard Sexton and Robert Glass, "Instability in the Kansas Economy," *Kansas Business Review*, Vol. 6, Nos. 5 and 6, March-June 1983, pp. 1-12.

County Profiles Available

NEW! County profiles based on the 1986-1987 *Kansas Statistical Abstract* are now available. The reports contain the same information as the Abstract reorganized so that all data pertaining to a single county appear together. In addition, there is a state profile report which contains the Kansas state level totals.

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_____ Barber	_____ Doniphan	_____ Harvey	_____ Marshall	_____ Pratt	_____ Stanton
_____ Barton	_____ Douglas	_____ Haskell	_____ McPherson	_____ Rawlins	_____ Stevens
_____ Bourbon	_____ Edwards	_____ Hodgeman	_____ Meade	_____ Reno	_____ Sumner
_____ Brown	_____ Elk	_____ Jackson	_____ Miami	_____ Republic	_____ Thomas
_____ Butler	_____ Ellis	_____ Jefferson	_____ Mitchell	_____ Rice	_____ Trego
_____ Chase	_____ Ellsworth	_____ Jewell	_____ Montgomery	_____ Riley	_____ Wabaunsee
_____ Chautauqua	_____ Finney	_____ Johnson	_____ Morris	_____ Rooks	_____ Wallace
_____ Cherokee	_____ Ford	_____ Kearny	_____ Morton	_____ Rush	_____ Washington
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Economic Indicators

TABLE ONE: ECONOMIC INDICATORS

Comparison Indicators	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Annual rates, SA						
Kansas - Mil. $	3rd	37748.00	37498.00	36114.00	0.67	4.52
United States - Bil.$	4th	3853.63	3761.00	3593.60	2.46	7.24
B. Employment						
Kansas - Thou., NSA	4th	1219.59	1219.05	1182.46	0.04	3.14
United States - Mil., SA	4th	113.49	112.85	110.44	0.56	2.76
C. Unemployment Rate						
Kansas - % NSA	4th	4.5	4.4	5.2		
United States - % SA	4th	5.9	6.0	6.8		
D. Retail Sales - Annual rates						
Kansas - Mil. $, NSA	4th	1434.92	1430.43	1368.12	0.31	4.88
United States - Bil. $, SA	4th	126.36	127.59	123.88	-0.97	2.00
E. Consumer Price Index-U, All items, SA						
Kansas City* - 1967 = 100	JUL-DEC	340.30	331.03	324.10	2.80	5.00
United States - 1967 = 100	JUL-DEC	343.80	337.00	329.70	2.02	4.28
Kansas Indicators						
F. New Incorporations, NSA						
For Profit - Number	4th	383.33	364.67	394.67	5.12	-2.87
G. Tax Revenue, NSA						
General Fund Tax Revenue - Mil. $	4th	161.00	147.93	168.73	8.83	-4.58
H. Operating Expenditures, NSA						
General Fund Operating Expenditures - Mil. $	4th	140.40	105.63	152.67	32.91	-8.03

*The Kansas City CPI-U is published semi-annually with the first period being January through June average and the second period being July through December average.
National employment and unemployment rate figures are based on the Current Population Survey (household survey).
State figures are based on the Current Employment Statistics Survey (establishment survey).
NSA-Not seasonally adjusted.
SA-seasonally adjusted.

SOURCE: BEA, BLS, Ks. Dept. of Human Resources, Ks. Secretary of State, Ks. Dept. of Administration, Ks. Dept. of Revenue.

TABLE TWO: NATIONAL INDICATORS
(Seasonally Adjusted)

General Indicators	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Income Measures, Annual rates						
Gross National Product - Bil. 82$	4th	3877.90	3835.90	3731.50	1.09	3.92
Disposable Personal Income - Bil. 82$	4th	2712.13	2674.77	2656.67	1.40	2.09
Personal Consumption - Bil. 82$	4th	2500.90	2520.70	2480.50	-0.79	0.82
Gross Private Investment - Bil. 82$	4th	717.20	681.90	631.00	5.18	13.66
Net Export of Goods and Services - Bil. 82$	4th	-136.40	-138.40	-151.80		
Government Purchases - Bil. 82$	4th	796.30	771.70	771.80	3.19	3.17
Savings Rate - %	4th	4.53	3.10	3.70		
B. Labor Force						
Civilian Labor Force - Mil.	DEC	120.72	120.59	118.58	0.11	1.81
Employed - Mil.	DEC	113.74	113.50	110.66	0.21	2.79
Unemployed - Mil.	DEC	6.98	7.09	7.92	-1.58	-11.88
Unemployment Rates - percent						
All	DEC	5.80	5.90	6.70		
Women	DEC	5.90	6.00	6.60		
Men	DEC	5.70	5.80	6.80		
Teens	DEC	16.10	16.60	17.50		
Blacks and other than white	DEC	10.90	11.00	12.30		
Whites	DEC	4.90	5.10	5.80		
C. General Business						
Industrial Production - 1977 = 100	4th	133.03	130.93	125.93	1.60	5.64
Mfg. and Trade Sales - Bil. 82$	4th	440.40	440.53	431.47	-0.03	2.07
Mfg. and Trade Inventories - Bil. 82$	4th	666.06	658.17	645.15	1.20	3.24
New Orders, Durable Goods - Bil. 82$	4th	102.32	98.76	93.99	3.60	8.86
Capacity Utilization, Mfg. %	4th	82.20	81.40	79.80		
New Housing Starts, Private - Tho.	4th	1534.33	1618.67	1716.67	-5.21	-10.62
D. Prices						
Consumer Prices - 1967 = 100						
CPI-U, All Items	DEC	345.90	345.50	331.40	0.12	4.38
Food	DEC	338.90	337.10	327.20	0.53	3.58
Housing	DEC	375.70	374.80	362.70	0.24	3.58
Apparel	DEC	219.60	222.20	209.50	-1.17	4.82
Transportation	DEC	322.10	323.50	303.60	-0.43	6.09
Medical	DEC	474.50	472.40	448.20	0.44	5.87
Producer Prices - 1967 = 100 (NSA)						
All Commodities	DEC	104.10	104.20	99.70	-0.10	4.41
Industrial Commodities	DEC	104.10	104.20	99.20	-0.10	4.94
Crude Materials	DEC	94.30	94.60	86.70	-0.32	8.77
Capital Equipment	DEC	112.40	112.50	111.00	-0.09	1.26
Agricultural Prices - 1977 = 100						
Prices Received	DEC	127.00	132.00	120.00	-3.79	5.83
Prices Paid	DEC	165.00	165.00	158.00	0.00	4.43
E. Monetary and Credit Aggregates*						
Total Reserves	4th	1.40	-1.60	24.30		
M1	4th	3.70	-0.10	17.00		
Commercial Banks:						
Savings	4th	-0.50	7.80	36.90		
Small Denomination Time	4th	15.40	8.00	-10.70		
Large Denomination Time	4th	9.20	4.10	0.10		
Thrift Institutions:						
Savings	4th	-8.80	7.10	23.20		
Large Denomination Time	4th	24.30	10.70	-7.00		
Debt Components:						
Federal	4th	7.40	5.90	11.80		
Nonfederal	4th	9.70	8.80	12.80		
Interest Rates - Monthly						
Prime Rate - %	DEC	8.75	8.78	7.50		
Discount Rate - %	DEC	6.00	6.00	5.50		

* Annual rates of change, seasonally adjusted in percent.

SOURCES: BEA, BLS, Survey of Current Business, Federal Reserve Bulletin.

TABLE THREE: QUARTERLY EMPLOYMENT IN KANSAS

	1987 Q4	1987 Q3	1986 Q4	% Change From 1987 Q3	% Change From 1986 Q4
A. General Indicators					
Civilian Labor Force - Tho.	1276.42	1274.95	1247.59	0.12	2.31
Employed - Tho.	1219.59	1219.05	1182.46	0.04	3.14
Farm Employment - Tho.	55.10	72.50	56.33	-24.00	-2.19
Unemployed - Tho.	56.83	55.90	65.13	1.66	-12.74
Initial Claims for Unemployment Insurance - Tho.	12.55	9.72	16.86	29.18	-25.55
Average Work Week, Mfg. - Hrs.	40.93	40.53	40.63	0.99	0.74
B. Industry Employment, in thousands					
All Industries	1019.40	996.90	1000.47	2.26	1.89
Manufacturing	178.00	177.10	174.87	0.51	1.79
Durable Goods	103.90	103.07	102.40	0.81	1.46
Fabricated Metal Production	11.27	11.27	10.90	0.00	3.36
Machinery (incl. Elec.)	27.87	27.63	26.77	0.84	4.11
Transport. Equip.	45.80	44.97	45.63	1.85	0.37
Nondurable Goods	74.10	74.03	72.47	0.09	2.25
Food and Kindred Prod.	28.53	28.10	27.67	1.54	3.13
Meat Products	14.90	14.47	14.23	3.00	4.68
Printing and Publishing	18.50	18.80	18.53	-1.60	-0.18
Petroleum and Coal	3.00	3.03	3.00	-1.10	0.00
Mining	12.07	11.73	10.77	2.84	12.07
Oil and Gas Extraction	10.63	10.17	9.27	4.59	14.75
Contract Construction	45.10	47.70	45.60	-5.45	-1.10
Trans. and Public Utilities	61.73	61.57	63.03	0.27	-2.06
Wholesale Trade	68.87	68.87	67.20	0.00	2.48
Retail Trade	189.10	184.17	185.60	2.68	1.89
Finance, Ins., and Real Estate	56.40	57.10	55.07	-1.23	2.42
Services	203.73	201.73	196.40	0.99	3.73
Federal Government	27.07	27.20	27.60	-0.49	-1.93
State and Local Government	177.33	159.73	174.33	11.02	1.72

SOURCES: BLS, Ks. Dept. of Human Resources.

TABLE FOUR: QUARTERLY KANSAS RETAIL SALES SUBJECT TO SALES TAX

	1987 Q4	1987 Q3	1986 Q4	% Change From 1987 Q3	% Change From 1986 Q4
Sales - Mil. $					
Apparel	39.15	35.52	38.01	10.22	3.00
Automotive	260.15	287.38	262.67	-9.48	-0.96
Food	341.11	339.19	329.06	0.57	3.66
Furniture	73.44	70.57	71.49	4.07	2.73
General Merchandise	232.08	213.58	224.12	8.66	3.55
Lumber and Building Materials	117.06	116.67	107.11	0.33	9.29
Prof. and Pers. Service	85.54	80.46	74.31	6.31	15.12
Public Utilities	65.99	71.21	61.63	-7.32	7.08
Unclassified	126.85	124.90	119.96	1.56	5.74
Farm and Garden Products	1.42	1.38	1.28	3.26	11.12
Manufacturing and Trading	91.18	86.15	79.94	5.85	14.06
Miscellaneous	4.67	3.44	4.32	35.71	7.97
Total	1434.92	1430.43	1368.12	0.31	4.88

NOTE: Retail sales figures are based on sales tax collections. Actual and reported retail sales may vary.

SOURCES: Ks. Dept. of Revenue.

TABLE FIVE: QUARTERLY PERSONAL INCOME IN KANSAS*

	1987 Q3	1987 Q2	1986 Q3	% Change From 1987 Q2	% Change From 1986 Q3
A. Personal Income					
Total - Mil. $	37748	37498	36114	0.67	4.52
Nonfarm Income - Mil. $	36416	35730	34622	1.92	5.18
Farm Income - Mil. $	1331	1768	1492	-24.72	-10.79
Average Weekly Earnings, Mfg.** - $	413	405	404	1.94	2.08
B. Earnings by Industry, in Millions					
Nonfarm	24954	24440	23552	2.10	5.95
Farm	1331	1768	1492	-24.72	-10.79
Manufacturing	5044	4966	4872	1.57	3.53
Durable Goods	3189	3097	3060	2.97	4.22
Nondurable Goods	1855	1869	1812	-0.75	2.37
Mining	408	390	348	4.62	17.24
Contract Construction	1662	1625	1551	2.28	7.16
Trans. and Public Utilities	2210	2170	2092	1.84	5.64
Wholesale Trade	1831	1802	1760	1.61	4.03
Retail Trade	2485	2448	2379	1.51	4.46
Finance, Ins., and Real Estate	1574	1537	1424	2.41	10.53
Services	5127	4996	4781	2.62	7.24
Federal Government	726	726	708	0.00	2.54
State and Local Government	651	634	623	2.68	4.49

*Seasonally adjusted, at annual rates
**Not seasonally adjusted.

SOURCES: BEA, Ks. Dept. of Human Resources.

TABLE SIX: MONTHLY KANSAS AGRICULTURAL INDICATORS

	1987 December	1987 November	1986 December	% Change From 1987 November	% Change From 1986 December
Prices Received *					
All Farm Products - 1977 = 100	150	148	134	1.35	11.94
All Crops - 1977 = 100	110	105	93	4.76	18.28
Wheat - $/Bu.	2.64	2.52	2.26	4.76	16.81
Sorghum Grain - $/Bu.	2.61	2.61	2.27	0.00	14.98
Corn - $/Bu.	1.84	1.73	1.57	6.36	17.20
Soybeans - $/Bu.	5.44	5.09	4.38	6.88	24.20
All Hay - $/Ton	64.00	58.00	45.00	10.34	42.22
Livestock and Products - 1977 = 100	175	174	160	0.57	9.38
All Beef Cattle - $/Cwt.	66.60	66.40	58.30	0.30	14.24
Steers and Heifers - $/Cwt.	68.00	67.90	60.80	0.15	11.84
Calves - $/Cwt.	84.60	84.10	64.50	0.59	31.16
Hogs - $/Cwt.	40.60	40.00	50.80	1.50	-20.08
Milk - $/Cwt.	12.20	12.90	13.90	-5.43	-12.23

*Not seasonally adjusted.

SOURCE: Ks. Crop and Livestock Reporting Service.

TABLE SEVEN: QUARTERLY EMPLOYMENT AND SALES FOR SMSAs AND COUNTIES

Area	1987 Q4	1987 Q3	1986 Q4	% Change From 1987 Q3	% Change From 1986 Q4
A. Wichita SMSA					
Civilian Labor Force - Tho.	254.23	252.75	225.07	0.59	12.96
Employed - Tho.	242.91	241.46	211.37	0.60	14.92
Unemployed - Tho.	11.32	11.29	13.67	0.31	-17.16
Rate - %	4.47	4.47	6.07		
Retail Sales - Mil. $	282.95	277.31	274.94	2.03	2.91
B. Kansas Portion of Kansas City SMSA					
Civilian Labor Force - Tho.	320.81	318.00	302.23	0.88	6.15
Employed - Tho.	306.82	303.75	289.63	1.01	5.93
Unemployed - Tho.	13.99	14.25	12.60	-1.76	11.07
Rate - %	4.37	4.47	4.20		
Retail Sales - Mil. $	333.14	338.29	330.30	-1.52	0.86
C. Topeka SMSA					
Civilian Labor Force - Tho.	91.18	90.53	86.77	0.71	5.08
Employed - Tho.	86.91	86.54	82.37	0.43	5.52
Unemployed - Tho.	4.27	3.99	4.40	6.83	-3.02
Rate - %	4.67	4.40	5.03		
Retail Sales - Mil. $	105.54	103.81	100.24	1.67	5.28
D. Lawrence SMSA					
Civilian Labor Force - Tho.	41.12	39.09	39.13	5.19	5.08
Employed - Tho.	39.66	37.70	37.77	5.19	5.00
Unemployed - Tho.	1.46	1.39	1.33	5.14	9.85
Rate - %	3.53	3.60	3.47		
Retail Sales - Mil. $	36.65	36.26	36.01	1.07	1.78
E. Riley County--Manhattan Area					
Civilian Labor Force - Tho.	28.42	26.78	27.53	6.14	3.23
Employed - Tho.	27.40	25.91	26.60	5.74	2.99
Unemployed - Tho.	1.03	0.87	0.97	17.98	6.14
Rate - %	3.60	3.27	3.50		
Retail Sales - Mil. $	19.97	17.87	17.49	11.76	14.18
F. Reno County--Hutchinson Area					
Civilian Labor Force - Tho.	31.34	31.66	31.90	-1.02	-1.76
Employed - Tho.	29.63	29.89	29.00	-0.87	2.18
Unemployed - Tho.	1.71	1.77	2.87	-3.54	-40.41
Rate - %	5.47	5.60	9.03		
Retail Sales - Mil. $	34.03	31.61	34.87	7.65	-2.42
G. Crawford County--Pittsburg Area					
Civilian Labor Force - Tho.	17.57	17.05	16.87	3.09	4.18
Employed - Tho.	16.61	16.12	15.77	3.05	5.37
Unemployed - Tho.	0.96	0.92	1.10	3.68	-12.94
Rate - %	5.47	5.40	6.43		
Retail Sales - Mil. $	14.87	14.87	14.16	-0.02	5.05
H. Lyon County--Emporia Area					
Civilian Labor Force - Tho.	19.98	18.92	19.47	5.62	2.65
Employed - Tho.	19.20	18.19	18.47	5.55	3.98
Unemployed - Tho.	0.78	0.73	1.00	7.28	-21.90
Rate - %	3.90	3.83	5.17		
Retail Sales - Mil. $	16.94	16.46	17.62	2.88	-3.88
I. Saline County--Salina Area					
Civilian Labor Force - Tho.	27.07	27.00	25.80	0.24	4.92
Employed - Tho.	25.76	25.69	24.20	0.26	6.44
Unemployed - Tho.	1.31	1.31	1.60	-0.05	-18.15
Rate - %	4.83	4.83	6.20		
Retail Sales - Mil. $	32.92	33.09	31.92	-0.50	3.12
J. Barton County--Great Bend Area					
Civilian Labor Force - Tho.	14.88	15.08	17.07	-1.32	-12.80
Employed - Tho.	14.10	14.20	15.43	-0.68	-8.61
Unemployed - Tho.	0.78	0.88	1.63	-11.53	-52.39
Rate - %	5.23	5.83	9.53		
Retail Sales - Mil. $	19.69	18.67	18.18	5.48	8.33
K. Montgomery County--Coffeyville Area					
Civilian Labor Force - Tho.	17.97	17.90	17.23	0.40	4.26
Employed - Tho.	17.00	16.90	15.83	0.60	7.34
Unemployed - Tho.	0.97	1.00	1.33	-2.90	-27.15
Rate - %	5.37	5.60	7.87		
Retail Sales - Mil. $	18.43	17.05	16.87	8.10	9.24

SOURCE: Ks. Dept. of Human Resources, Ks. Dept. of Revenue.

TABLE EIGHT: QUARTERLY BANKING ACTIVITY IN KANSAS*

Federal Reserve Member Banks	1987 Q4	1987 Q3	1986 Q4	% Change From 1987 Q3	% Change From 1986 Q4
Kansas, in Millions					
Total Deposits	34614.0	33922.3	32382.0	2.04	6.89
Total Checkable	6170.3	6056.7	5854.4	1.88	5.40
Demand Deposits	3183.7	3081.7	3176.2	3.31	0.24
Other Checkable	2986.7	2961.0	2678.8	0.87	11.49
Small Time and Savings	23445.7	23075.0	22056.1	1.61	6.30
Large Time	4998.0	4790.7	4475.3	4.33	11.68
Kansas City, KS, in Millions					
Total Loans	1726.27	1701.77	1474.46	1.44	17.08
Real Estate	873.00	850.23	678.62	2.68	28.64
Commercial and Industrial	541.27	522.77	443.96	3.54	21.92
Consumer	103.53	106.40	128.41	-2.69	-19.37
Total Deposits	1870.90	1846.67	1685.15	1.31	11.02
Demand Deposits	237.67	246.43	236.96	-3.56	0.30
Time and Savings	1030.63	997.70	951.34	3.30	8.34
Topeka, in Millions					
Total Loans	325.23	322.97	336.94	0.70	-3.47
Real Estate	104.10	102.87	93.16	1.20	11.75
Commercial and Industrial	110.97	109.10	126.11	1.71	-12.01
Consumer	53.47	48.43	51.64	10.39	3.53
Total Deposits	537.27	510.93	543.05	5.15	-1.06
Demand Deposits	173.07	158.70	172.37	9.05	0.41
Time and Savings	231.67	223.53	238.00	3.64	-2.66
Wichita, in Millions					
Total Loans	1242.73	1236.23	1233.80	0.53	0.72
Real Estate	247.60	253.13	206.30	-2.19	20.02
Commercial and Industrial	458.30	470.93	519.25	-2.68	-11.74
Consumer	379.70	360.30	341.23	5.38	11.27
Total Deposits	1864.23	1864.33	1824.28	-0.01	2.19
Demand Deposits	466.10	460.47	470.29	1.22	-0.89
Time and Savings	924.23	916.97	870.54	0.79	6.17

*The data above pertain only to Federal Reserve member banks of Kansas and do not represent all commercial banking in the state. Since 1980, these data have covered approximately 50 percent of the state's banking activity.

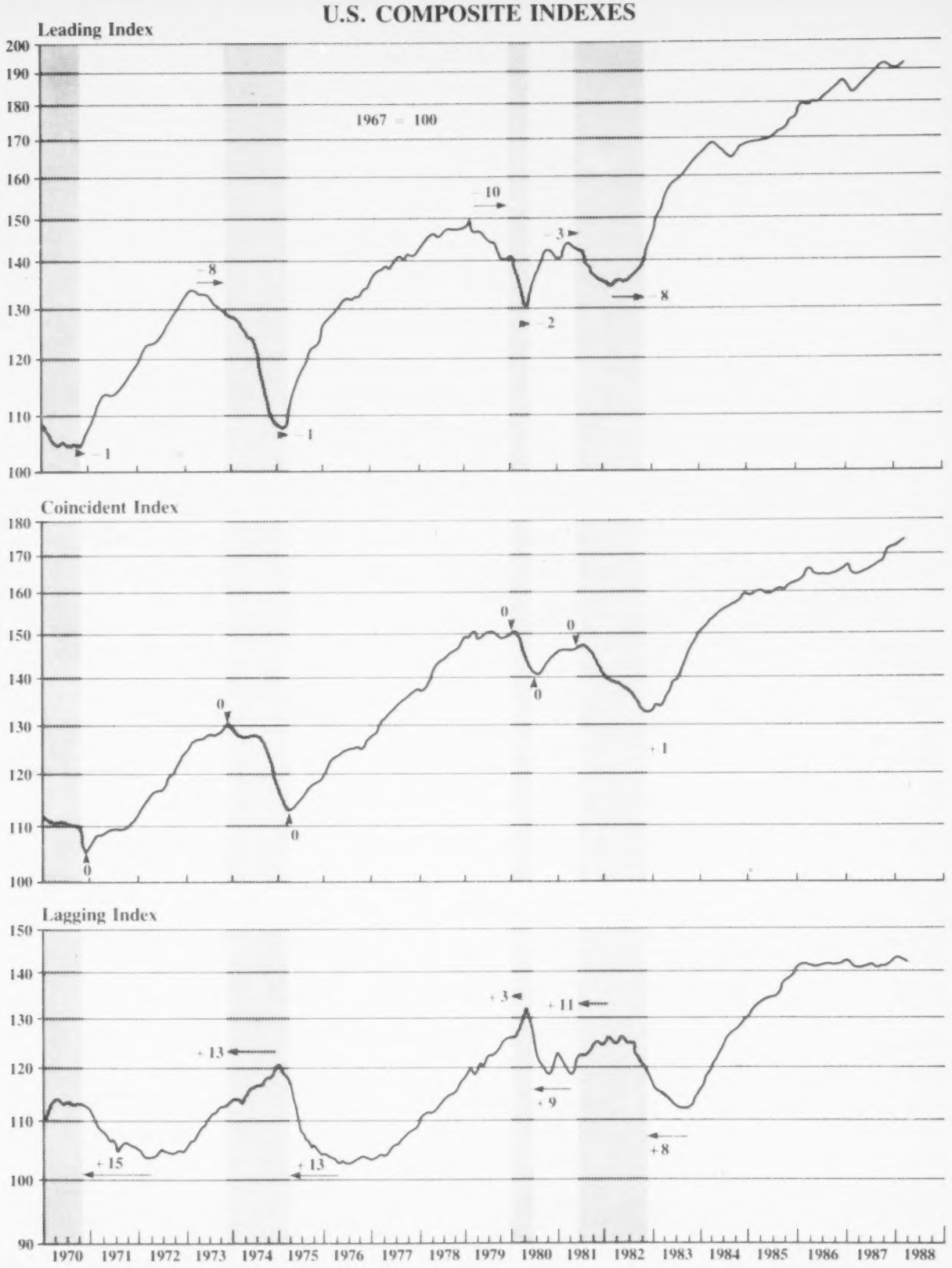
SOURCE: Federal Reserve Bank of Kansas City.

TABLE NINE: QUARTERLY SAVINGS AND LOAN ACTIVITY IN KANSAS

Area	1987 Q4	1987 Q3	1986 Q4	% Change From 1987 Q3	% Change From 1986 Q4
A. Kansas, in Millions					
Total Assets	20410.30	19961.47	16836.63	2.25	21.23
Mortgage Loans	14667.90	14936.43	13072.97	-1.80	12.20
B. Kansas City, KS, in Millions					
Total Assets	2098.33	2069.33	1940.00	1.40	8.16
Mortgage Loans	1629.93	1536.03	1484.40	6.11	9.80
C. Topeka, in Millions					
Total Assets	2988.37	2936.67	2907.57	1.76	2.78
Mortgage Loans	2591.03	2544.47	2387.23	1.83	8.54
D. Wichita, in Millions					
Total Assets	2168.67	2374.50	2014.67	-8.67	7.64
Mortgage Loans	1616.40	1785.87	1495.43	-9.49	8.09

SOURCE: Federal Home Loan Bank of Topeka.

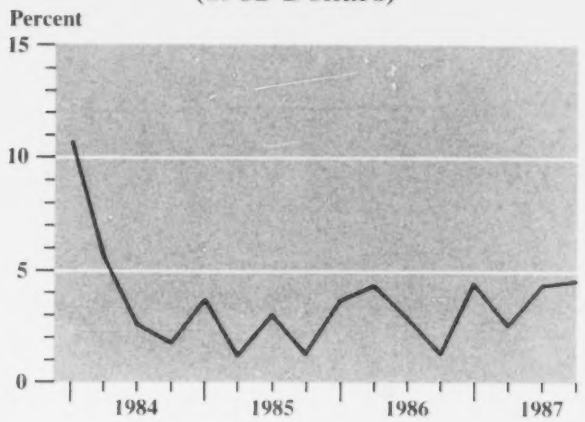
U.S. COMPOSITE INDEXES



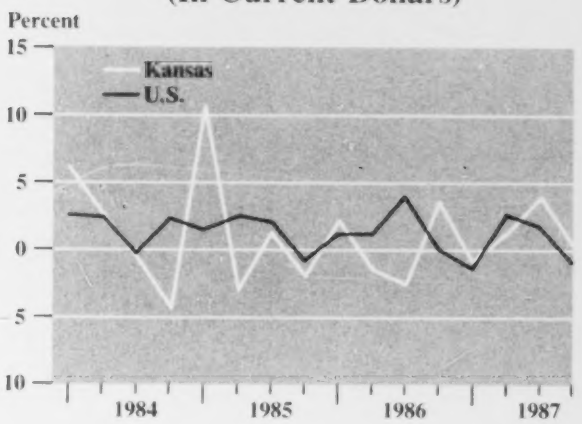
Source: Bureau of Economic Analysis, *Business Conditions Digest*.

Note: Numbers entered on the chart indicate length of leads (−) and lags (+) in months from reference turning dates.
Shading indicates periods of recession.

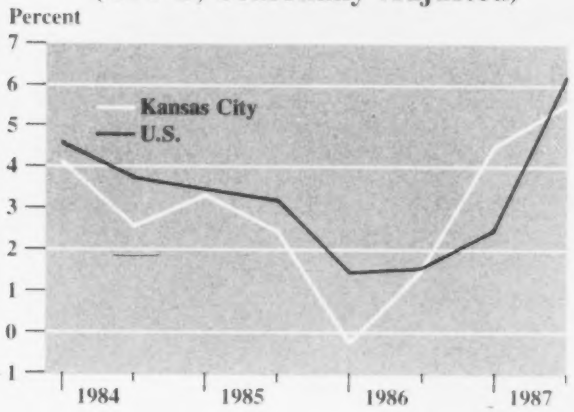
Average Annual Growth Rate of GNP
(1982 Dollars)



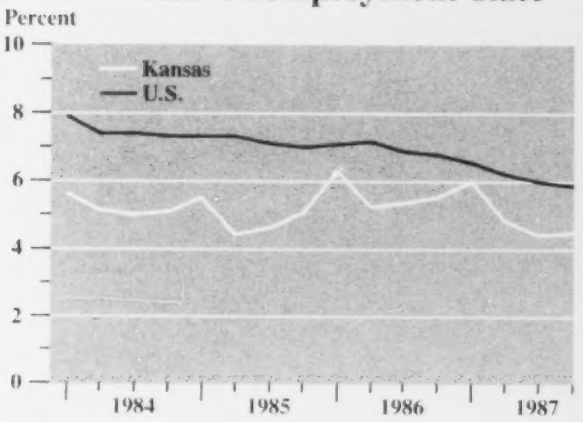
Growth of Retail Sales
(In Current Dollars)



Rate of Inflation
(CPI-U, Seasonally Adjusted)



Civilian Unemployment Rate



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Steven Maynard-Moody

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Economic Indicators

The Institute for Public Policy and Business Research, The University of Kansas

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Advisory Board of the Institute for Public Policy and Business Research—Edward Bruske, President, Kansas Chamber of Commerce and Industry; Harland Priddle, Secretary of Commerce; Executive Vice Chancellor Judith Ramaley; Vice Chancellor Frances Horowitz; Anthony Redwood, Executive Director, Institute for Public Policy and Business Research; Dean John O. Tollefson, School of Business; Joseph Sicilian, Chairman, Department of Economics.

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The purpose of the *Kansas Business Review* is to provide a forum for the dissemination of research studies and reports in the fields of economics and business that would be of special interest and relevance to business persons, public officials, and academicians in Kansas and the Plains Region.

The Editorial Review Board welcomes submissions of original manuscripts as well as reports on research and opinion pieces. The style, however, should emphasize exposition rather than technical details. All submissions will be reviewed initially by the editorial staff and, when judged appropriate, will be sent to referees who are knowledgeable about the content.

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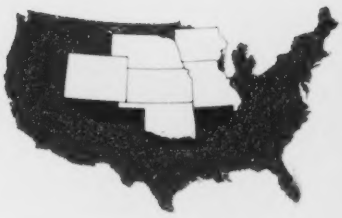
Business Taxes in Kansas and Nearby States



Pat Oslund

Pat Oslund is a research economist at the Institute for Public Policy and Business Research.

Introduction

All states desire tax structures that invite new business and encourage expansion. At the same time, state and local governments must maintain the capacity to provide public services to businesses and individuals. Often these two goals conflict, and states must balance the demand for low business taxes with the demand for adequate public services. State and local governments increasingly rely on industrial incentives to create a favorable business tax climate. During the fall of 1987, Kansas Inc. asked the Institute for Public Policy and Business Research to investigate how taxes affect the Kansas business climate, and in particular, how Kansas taxes and incentives compare with those in nearby states. This article summarizes the findings of our study.[1]

First the business tax structures of Kansas and five nearby states are described, and tax incentives offered for business investment and expansion are delineated. Then the tax burden of a typical new manufacturing firm is calculated under each state's tax structure.

What Types of Taxes do Businesses Pay?

Businesses in Kansas and the nearby states pay several types of state and local taxes. All state governments in the region collect state corporate income taxes, and most of them levy a franchise tax or license fee for the privilege of conducting business. States also collect sales taxes on business purchases, which may include business plant and equipment, that are not specifically tax exempt.

Local governments tax business real estate, and in some states they tax business personal property such as plant, equipment, and inventories. Local governments may also impose sales taxes on some business purchases. Based on their labor usage, firms make payments into two special funds: workers' compensation and unemployment insurance. These payments act as a tax on labor.

Various tax credits, deductions, and abatements stimulate investment by reducing taxes for new and expanding firms. In Kansas, development incentives apply to all major business taxes, so that a firm that qualifies for development incentives may pay substantially lower income, sales, and property taxes.

Corporate Income Tax: Basic Rates, Credits, and Deductions

State governments levy corporate income taxes on net profits or taxable income derived from within the state. Each state has its own method of defining taxable corporate income. To generalize, state specific adjustments are made to a firm's reported federal taxable income.

Variations among states in what adjustments are allowed mean that the rate tables published by state departments of revenue are not comparable. The most significant adjustment, allowed in some states and not in others, is the deduction for federal income taxes paid. For example, according to tax tables for Missouri and Oklahoma, both states tax corporate income at 5 percent. But Missouri firms subtract federal income tax paid to arrive at state taxable income, and Oklahoma firms do not. The same firm would multiply 5 percent by a smaller taxable income in Missouri than in Oklahoma, so Missouri's effective tax rate is much lower than Oklahoma's.

Table 1 shows both tax table rates and effective rates for the six states in the region. To make these rates comparable, *income* is defined as state taxable income less any deductions for federal income taxes paid, so Iowa and Missouri tax table rates were multiplied by (1 – federal tax rate × percent federal deductibility).

Effective corporate tax rates for Missouri are substantially lower than rates in competing states. Even taking local income taxes in Kansas City and St. Louis into account, Missouri tax rates for large and medium-sized firms are the lowest in the region. Effective rates in Iowa are the highest in the region for firms with incomes over $100,000. Kansas tax rates are the second lowest in the region for firms with incomes less than $25,000. Larger firms, however, face tax rates higher than the regional average. A proposal to lower Kansas rates failed in the most recent legislative session.

A recurrent problem in researching state income taxation is the treatment of the income of multistate firms. States employ a variety of methods to determine the percentage of a multistate firm's profits that are taxable in a particular state (Table 2). Nationally, the most common way to compute this percentage is known as the three-factor formula.

The three production factors are sales, property, and payroll. For each factor, the ratio of in-state value to total firm value is calculated. A weighted average of the three ratios determines the proportion of taxable net income assigned to a

Effective corporate tax rates for Missouri are substantially lower than rates in competing states.

Table 1
State Corporate Income Tax Rates, 1988

State	Tax Table Rate	Effective Rate*	Federal Deductibility
Colorado	For FY 87-88: First $50,000 — 5.5% Over $50,000 — 6.0% Beginning in FY 89: flat rate of 5.0% will be phased in, fully effective 1993.	 5.50% 6.00% 5.00%	No
Iowa	First $25,000 — 6.0% Next $75,000 — 8.0% Next $150,000 — 10.0% Over $250,000 — 12.0%	5.00% 6.60% 8.30% 10.00%	50% of federal income tax is deductible
Kansas	First $25,000 — 4.5% Over $25,000 — 6.75%	4.50% 6.75%	No
Missouri	Flat 5.0% Also: 1% local income tax on net profits on activities in Kansas City and St. Louis	3.30%	100% deductibility of federal taxes paid on income apportioned to Missouri
Nebraska	First $50,000 — 4.75% Over $50,000 — 6.65%	4.75% 6.65%	No
Oklahoma	Flat 5.0%	5.00%	No

*Assumes a marginal federal tax rate of 34 percent: Effective rate = tax table rate [(1 - .34) (fraction of federal deductibility)].

Table 2
Method of Apportionment for State Corporate Income Taxation

Colorado	Choice of two-factor formula (1/2 sales, 1/2 property) or three-factor formula (1/3 each sales, property, payroll).
Iowa	Single-factor formula based on sales only.
Kansas	Three-factor formula (1/3 each sales, property, payroll). For firms with a payroll factor exceeding 200% of the average of the property factor and the sales factor, a two-factor formula based 50% on sales and 50% on property is an option.
Missouri	Choice of single-factor formula based on sales only or a three-factor formula (1/3 each sales, property, payroll).
Nebraska	A single-factor formula based on sales only will be phased in between 1988 and 1992. During the phase-in period, the single-factor formula and a three-factor formula are combined at varying weights.
Oklahoma	Three-factor formula (1/3 each sales, property, payroll).
Source:	Information provided by individual states.

particular state. Oklahoma uses a three-factor formula exclusively. Kansas relies primarily on the three-factor formula.

However, changes enacted by the last Legislature allow the choice of a two-factor formula for firms that have a payroll factor at least twice as large as the average property and sales factors. The recent legislation aims at attracting headquarters establishments. Colorado and Missouri offer all multistate firms a choice of allocation formulas. In Colorado, the firm may opt for a three-factor formula or a two-factor formula based 50 percent on sales and 50 percent on property. Missouri allows the choice of a three-factor formula or a single-factor formula based solely upon sales. Iowa relies on a sales-only formula exclusively, and Nebraska plans to phase in a sales-only apportionment formula by 1992.

Firms with national or international markets gain clear advantages from plant locations in states that allow a sales-only allocation formula.[2] Table 3 shows a typical example. The firm's large payroll and property ratios indicate that production is concentrated within the state. The small sales ratio shows that the firm exports most of its output to out-of-state customers. Under a sales-only allocation formula, an export oriented firm pays very little income tax to the state where it concentrates production. The export oriented firm probably owes some additional income taxes in other states where it sells, but these taxes are largely independent of the firm's production location. The Kansas three-factor method of income allocation may place the state at a disadvantage in competing for export oriented firms.

Income Tax Incentives

While corporate income taxes comprise only a small share of state revenues, they present a significant tax cost to firms. In an effort to encourage new and expanding firms, each of the six states offers corporate income tax credits and deductions as economic development incentives. Colorado, Kansas, Nebraska, and Oklahoma have introduced or expanded such credits since 1986.

Iowa and Kansas target research activity. In both states the credit is 6.5 percent of qualifying research expenditure. These tax credits stand out as innovative in the region.

Table 3
Income Apportionment for a Multistate Firm: An Example

PROFILE OF FIRM

	Total	In-State	Ratio In-State/Total
Sales	$200,000	$20,000	.10
Payroll	$100,000	$75,000	.75
Property	$400,000	$320,000	.80

PERCENT OF INCOME SUBJECT TO STATE TAXES UNDER ALTERNATIVE FORMULAS

Sales-only formula	10%
50% sales, 50% property formula	45%
33.3% sales, 33.3% payroll, 33.3% property formula	55%

More common income tax incentives include credits for new jobs and investment and credits for job expansion. The specifics of the credits vary among the states, as Table 4 shows, and it is difficult to compare them for several reasons. First, eligibility for the credits differs across the states. For example, Oklahoma only allows job and investment credits to manufacturers. Second, the duration of credits varies from state to state; Kansas firms may claim credits for 10 years, while Iowa credits are offered for a single year. Finally, the states place different limits on the percentage of tax liability that can be offset by job and investment credits. Most states allow the credit to apply against 100 percent of a firm's tax liability; in fact, Missouri even allows a refund if firms qualify for tax credits in excess of their tax liability. Kansas limits the credit to a maximum of 50 percent of the tax liability.

Most states in the region offer special income tax credits in specified distressed areas or Enterprise Zones. Colorado, which established Enterprise Zones in 1986, is the latest of the states to adopt such legislation. Table 5 reveals that income tax credits are significantly larger for firms operating within Enterprise Zones than for their counterparts operating outside. Colorado triples its usual 1 percent state-wide investment tax credit for firms operating in Enterprise Zones. The Kansas Enterprise Zone credit may reach $500 per new job if the employee is eligible for federal targeted jobs tax credits. Missouri's credit may be up to $1,200 per job plus $400 for training a zone resident. Missouri also exempts 50 percent of the Missouri taxable income earned by a business within the Enterprise Zone for 10 years.

Credits and deductions can make an enormous difference in the income tax expenses of a firm. This is especially true for new firms, where most employees and investment will qualify for economic development incentives. The last section of this article quantifies the impact of state and local tax incentives.

Sales Tax

The general sales tax is usually imposed on sellers at the final stage of distribution. It provides an important source of revenue for all state governments in the region and for many local governments. 1986 state sales tax revenue as a percentage of total state revenue ranged from 22 percent in Oklahoma to 42 percent in Missouri. As a percentage of local tax collections, local sales tax revenue ranged from 0 percent in Iowa, where the legislature only recently granted localities the authority to levy a local sales tax, to a high of 36 percent in Oklahoma.

Over the past five years, all states in the region have increased sales tax rates. Iowa, Kansas, Nebraska, and Oklahoma have legislated permanent sales tax increases, while Colorado and Missouri have experimented with temporary increases. The region has become increasingly dependent on sales taxes for state and local financing; the share of sales taxes in total state and local revenues has risen during the 1980s from about 23.5 percent to over 26 percent. As illustrated in Figure 1, the sales tax share in Kansas has risen much less rapidly than in the region as a whole.

All six of the state sales tax rates fall within a narrow range. Iowa, Kansas, Nebraska, and Oklahoma levy a state sales tax of 4 percent. Missouri's rate stands at 4.225 percent and will decrease to 4.125 percent in 1990. Colorado imposes a 3 percent sales tax. Local sales taxes add to the sales tax bill. Table 6 shows how sales taxes may vary both between states and between localities within a state. For example, the total sales tax reaches 7 percent in Denver. Recent legislation gives localities in Missouri the option for relatively high sales taxes. In St. Louis County sales tax may reach 7.6 percent, and in other jurisdictions, 7.225 percent. The current sales tax rates in Kansas City, Missouri, and St. Louis are both 6.25 percent. In Kansas the maximum combined state and local rate is 6 percent, with cities and counties each allowed to tax up to 1 percent. In Kansas City, Kansas, combined state and local sales taxes reach the maximum of 6 percent. In Wichita, the sales tax is 5 percent.

Sales taxes affect firms in two independent ways. First, sales taxes alter prices paid by local consumers, influencing the quantity of goods purchased. Second, sales taxes add to the prices of

Figure 1
Importance of Sales Tax as Revenue

(sales tax as a percent of state and local taxes)

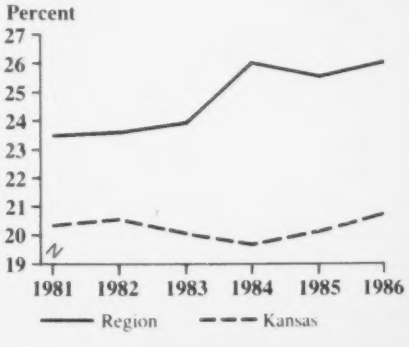


Table 4
New Job and Investment Tax Credit

State	Tax Credit	Limitations	Eligibility
Colorado	1% tax credit for investment in qualified depreciable property (effective January 1, 1988).	100% of tax liability up to $1,000. Excess may be forwarded up to three years.	Limited to corporate taxpayers.
Iowa	6% of wages subject to unemployment insurance for new jobs created.	Excess may be forwarded up to ten years.	Must enter into agreement with an area community college. Must increase employment 10% above existing base level.
Kansas	$100 per new job; $100 per $100,000 investment.	50% of tax liability. Can be claimed for maximum of 10 years.	
Missouri	*New firm*: $75 per new job; $75 per $100,000 investment. *Expanding firm*: $100/new job; $100 per $100,000 investment.	100% of tax liability. Can be claimed for ten years. Can be deferred for up to three years.	Must add at least two new employees. Office tenants must employ 50 or more persons.
Nebraska	*For smaller businesses*: $1,000 per new job; $1,000 per $100,000 investment.	Cannot exceed 50% of tax liability for five years.	Must increase business by two full-time employees. Minimum of $100,000 investment. Must meet other qualifying criteria.
	For larger businesses: Tax credit equal to 5% of compensation paid to new employees, for seven years. 10% tax credit for investment in qualified depreciable property. Refund of sales and use taxes for all purchases of depreciable property. Up to 15 years use of sales-factor only formula.	Up to 100% of tax liability. Firm stays eligible for seven years. Excess must be used within 15 years.	At least $3 million investment and 30 new jobs.
	Also, personal property tax exemption for 15 years for turbine-powered aircraft and mainframe computers. Personal property tax exemption for 15 years for equipment used in manufacturing or processing of agricultural products.	Up to 100% of liability for seven years, excess may be used during a 15-year period.	At least $10 million investment and 100 new jobs.
	Immediate use of sale-factor only formula. Refund of all sales and use taxes for all purchases of depreciable property.		At least $20 million investment in qualified property.
Oklahoma	For each new worker, 1% of new investment in depreciable property placed in service before 1995. Investment qualified for credit cannot exceed $50,000 per new employee.	100% of tax liability for five years.	Must be a manufacturing or processing firm. Investment must be at least $50,000. Investment cannot decrease number of full-time employees in the state. Minimum annual salary per new job must be at least $7,000.

Source: Information provided by individual states.

Table 5
Enterprise Zone Job and Investment Tax Credits

State	Tax Credit	Limitation	Eligibility
Colorado	Option of tripling state-wide investment tax credit of 1%, or claiming Enterprise Zone credit of 3%. More restrictions on state-wide credit. $500 per new job.	100% of tax liability up to $5,000 plus 25% of tax liability above $500. Excess may be carried forward seven years and back three years.	Business must qualify under federal investment tax credit guidelines which existed in 1986. Must reside in Enterprise Zone for at least one year, and be a new facility used to operate a revenue producing enterprise or be an expansion of at least $1 million or double original investment.
Iowa	No Enterprise Zones.		
Kansas	$350 per new job ($500 per new job if employer is eligible for federal targeted jobs tax credit) and $350 per $100,000 of new investment.	50% of tax liability for ten years.	Business must be revenue-producing enterprise paying Kansas income tax. In addition, a business must invest at least $51,000. Must be at least two new employees as a direct result of investment.
Missouri	Up to $1,200 per new job plus up to $400 per new job for training zone resident or employee who is considered unemployable and 10% credit for first $10,000 investment, 5% credit for next $90,000 and 2% of remaining investment. Also, 50% of taxable income earned in Enterprise Zone is exempt from state income tax for first ten years.	100% of liability for ten years. 50% of excess refunded up to $75,000 on tax credits earned during the first two years of operations.	Business must establish or expand operations in an Enterprise Zone involving new capital investment and/or the creation of new jobs. Also, qualifying criteria include: 1) At least 30% of persons employed must reside within the zone. [A temporary waiver or reduction of this requirement may be granted for up to 18 months to small businesses employing 20 or fewer full-time employees.] 2) Included are all revenue-producing businesses including offices that employ 50 or more, as well as businesses that sell products or lease/rent residential property to low and moderate income persons.
Nebraska	No Enterprise Zones.		
Oklahoma	2% tax credit per $50,000 investment in qualified depreciable property.	100% of liability for five years—investment cannot decrease number of full-time employees in the state.	Business must be involved in manufacturing or processing.

Source: Information provided by individual states.

certain business purchases, and hence influence costs of production. It is this second influence that may affect business location and expansion decisions.

Sales tax exemptions for specified goods affect production costs. The rules for exemptions from the sales tax are complex, but all states exempt materials consumed in manufacturing and component parts. Fuels and energy are exempt in Colorado, Iowa, Kansas, and Oklahoma; in Missouri and Nebraska, exemptions apply on a restricted basis. The laws exempting machinery and equipment expenditures from sales taxes are particularly intricate. Whether an equipment purchase is taxed may depend on whether the item is used in manufacturing, whether the firm qualifies as new or expanding, and whether the firm operates in an Enterprise Zone.

Kansas law makes two provisions for the exemption of capital goods from the Kansas sales tax:

1. As of January 1, 1989, all sales of machinery and equipment used in Kansas for manufacturing, warehousing, or distributing are exempt from sales tax. Until 1989, taxes on machinery and equipment can be refunded when the purchase is for a new or expanding manufacturing business.

2. Second, qualified firms in Enterprise Zones are exempt from sales tax on purchases of machinery and equipment (except replacement purchases) and services and property used in the construction of the facility (K.S.A. 79-3606). The Enterprise Zone exemption extends to most types of industries, including both manufacturing and services. It also applies to all types

Table 6
Sales Tax Rates

	State Tax	Local Tax
Colorado	3%. 0.1% tax on tourism related goods and services.	May be levied, not to exceed 4%.
Iowa	4%.	May be levied up to 1%; also local option hotel/motel tax may be levied not to exceed 7%.
Kansas	4%.	May be levied at 0.5% or 1% by both counties and cities.
Missouri	4.225%. As of January 1, 1990: 4.125%.	May be levied not to exceed 3%; St. Louis county may levy up to 3.375% tax.
Nebraska	4%.	May be levied at 1-1.5%.
Oklahoma	4%.	May be levied, county levy not to exceed 2%.

Source: Information provided by individual states.

of capital purchases, including construction.

Table 7 compares sales tax provisions for machinery and equipment. All six states exempt manufacturing equipment in new facilities. Most states allow exemptions for replacement equipment. For firms operating outside of Enterprise Zones, Kansas sales tax provisions compare favorably with those in nearby states. Kansas and Nebraska stand out by exempting selected export oriented industries such as warehousing and distribution as well as manufacturing. Kansas offers generous exemptions to firms in Enterprise Zones, extending exemptions to most industries and types of capital goods.

Property Tax

State and local governments levy property taxes on the value of land, buildings, and equipment owned by businesses and households. Property taxes provide the major source of local tax revenue for all six states. Regionally, property tax as a percentage of local tax collections ranges from 56 percent in Missouri to 98 percent in Iowa. It is a significant tax for businesses. The types of business property subject to taxation vary from state to state. Real property, which includes land and buildings, is subject to taxation in all jurisdictions considered in this study. Manufacturing machinery and equipment adds to the tax base in all the states considered. Other personal property of firms is taxable in most states except Iowa, which repealed all personal property taxes effective January 1, 1987. Most states in this study exempt inventories from property taxes to some degree, and all states make provisions for goods in transit. Recently many states have expanded the power of localities to exempt new or expanding firms from some or all property tax payments. The impact of property taxes on any given firm depends on whether that firm is eligible for any development tax incentives.

Two factors determine the tax levied on a piece of property. The *assessed valuation* of the property is the base against which taxes apply. The *mill levy* is the tax rate, expressed as the dollar tax per $1,000 assessed valuation. Property taxes equal the mill levy times the assessed valuation.

The assessed valuation of a piece of property rarely equals its market value. In some states, a statutory assessment ratio of less than 100 percent allows only a portion of the value of property to be included in the tax base. Property subject to a 30 percent statutory assessment ratio will be assessed considerably lower than market value. Even more troublesome are discrepancies between statutory assessment ratios and actual assessment ratios. To illustrate, Kansas employed a statutory assessment ratio of 30 percent for all types of property in 1986. In practice, residential real estate showed a median assessment ratio of 7.71 percent while commercial and industrial real estate showed a median 9.86 percent ratio.[3]

Effective tax rates, shown in Table 8, relate property taxes to estimates of market value. Effective tax rates usually differ substantially from the applicable mill rate. Furthermore, effective tax rates often differ according to whether the property is residential or industrial. This is true even in states where the statutory assessment ratio is the same across classes of property.

Because the authority to tax property is primarily local, property tax rates vary widely within each state. While the computed state average in Table 8 may not represent any particular location in the state, it nevertheless provides an indicator of whether property taxes are high or low.

In 1986, Kansas was among the lowest taxed states in the region for residential and commercial/industrial real estate. However, Kansas property taxation is changing. As of 1989, different statutory assessment ratios will apply to various classes of property. Simultaneously, Kansas property is undergoing a major reas-

Regionally, property tax as a percentage of local tax collections ranges from 56 percent in Missouri to 98 percent in Iowa.

sessment. After reassessment and classification of property in Kansas, estimates indicate that the average effective tax rates on commercial/industrial and residential real estate will be 27.99 and 11.2 mills respectively.[4]

Businesses are particularly concerned with taxes on three classes of property: commercial/industrial real estate, inventories, and machinery and equipment. Only Oklahoma and Kansas currently include inventories in the property tax base. Effective January 1, 1989, Kansas will begin to exempt inventories from property taxes. But until then, the Kansas Freeport Law allows exemptions from property tax on inventories for businesses that engage in interstate trade. The amount of the exemption is based on the proportion of their shipments to other states. Most states in the region tax all business machinery and equipment; Iowa taxes only manufacturing machinery and computers. The states assess these taxes based on fair market value, but the particular rules used to appraise the market value vary from each other and diverge from economic measures of value such as used asset prices. For new equipment, however, the measured value and market value are likely to be similar.

The property taxes paid by a business are actually a composite of the taxes that apply to the major categories of business property: real estate, inventories, and machinery. The assessment ratios on these types of property may differ, both because of statutory provisions and because of assessment practices.

Table 9 shows the property taxes that a hypothetical firm operating in each of the six states would pay. The example assumes that the fair market values of equipment and inventories are estimated correctly, so that statutory and effective rates for these types of property are identical. The effective assessment ratios of Table 8 are applied to real estate. For a firm with the asset structure indicated, property taxes range from a low of $7,484 in Oklahoma to a high of $17,335 in Nebraska.

The example also estimates the effect of reassessment and property classification on Kansas firms. The firm in the example would experience a considerable reduction in taxes, due to the reduction in the statutory assessment ratio on machinery from 30 percent to 20 percent and the elimination of property taxes on inventories. However, a firm with small inventories and a large real estate component could actually end up paying higher taxes after Kansas property tax reforms.

Abatement of property taxes on land, buildings, and equipment is a significant incentive found with varying restrictions in all six states. Kansas allows local governments to grant 10-year property tax exemptions to new firms engaging in manufacturing, research and development, and interstate warehousing. Expansions of existing businesses also qualify if new employment results.

Iowa offers a broad package of exemptions. As a local option, a percentage of the value added to industrial property due to new construction and acquisition of new machinery may be excluded from the property tax base for up to five years. The exemption is limited to manufacturers, distributors, and warehouses. Additionally, Iowa assesses industrial equipment and computers at a different rate than other property. Assessment is at 30 percent of acquisition cost rather than at full market value. This lowers the effec-

Table 7
Sales Tax Exemptions in Kansas and Nearby States

OUTSIDE ENTERPRISE ZONES

	Manufacturing Equipment		Other Equipment	
	New Firm	Replacement	New Firm	Replacement
Kansas	exempt[1],[10]	exempt[1]	taxed	taxed
Colorado	exempt	exempt	taxed	taxed
Iowa	exempt	exempt	taxed[3]	taxed[3]
Missouri	exempt	exempt[4]	taxed[5]	taxed[5]
Nebraska	exempt[6]	taxed[7]	taxed[8]	taxed
Oklahoma	exempt	exempt	taxed	taxed

INSIDE ENTERPRISE ZONES

	Manufacturing Equipment		Other Equipment	
	New Firm	Replacement	New Firm	Replacement
Kansas	exempt[1]	exempt[1]	exempt	taxed
Colorado	exempt	exempt	taxed[2]	taxed[2]
Iowa	N/A[9]	N/A	N/A	N/A
Missouri	exempt	exempt[4]	taxed[5]	taxed[5]
Nebraska	N/A[9]	N/A	N/A	N/A
Oklahoma	exempt	exempt	taxed	taxed

[1]Taxes are refunded on manufacturing equipment for firms outside Enterprise Zones which meet new or expanding firm qualifications. Effective January 1, 1989, all sales of machinery and equipment used directly in manufacturing, warehousing, and distributing are exempt.
[2]Local sales tax may be refunded in Enterprise Zone.
[3]Computers used in manufacturing, or to process data for insurance, financial institutions, and some commercial operations exempt.
[4]When necessary for product changes.
[5]Except pollution abatement equipment.
[6]Must be new or expanding firm. Equipment installed in new construction.
[7]Except when for product diversification.
[8]Exempt for qualified new or expanding firms in manufacturing, warehousing, transportation, distribution.
[9]No Enterprise Zones.
[10]Manufacturing and farm equipment and machinery, new and replacement, is exempt from local sales taxes in most communities (K.S.A. 12-190).

Source: Statutes of individual states. Further information provided by state departments of revenue.

Table 8
Property Taxes: 1986

	Mill Levy Range[1]	Average	Average Actual Assessment Ratio for 1986	Statutory Assessment Ratios	Average Effective Tax Rate: % of Current Fair Market Value[2]
Colorado	(33.87 - 114.96)	101.123 61.6[3]	Residential: 21% of 1977 value. All other except agriculture, oil, gas and producing mines: 29% of 1977 value. Gas and mines based on production. Starting in 1987, assessments based on 1985 values. Residential assessment ratio will be 18%.	Res: 21% Other: 29%	Not Available
Iowa	(20.03 - 38.46)	29.23	Agriculture assessed at productivity. Commercial and industrial assessed at market value. Residential: 77% of market value.	100% 30% for industrial equipment[6]	Residential: 22.50 Industrial: 29.30
Kansas	(71.46 - 376.68)	115.28 93.3[4]	Residential: 7.71% Commercial: 9.86% Industrial: 10.0%	30%[5]	Residential: 8.88 Industrial: 11.52
Missouri	(27.50 - 71.00)	42.60	Residential: 18.7% Agriculture: 11.7% Commercial-industrial: 31%	33 1/3%	Residential: 7.97 Industrial: 13.21
Nebraska	(20.28 - 33.28)	24.103	Single family home improved: 84.92% Multi-family home improved: 82.47% Commercial improved: 85.53% Industrial improved: 87.72%	100%	Residential: 20.47 Industrial: 21.14
Oklahoma	(54.00 - 125.31)	81.00	Effective 1988: real property must be between 10 and 15%. Commercial-industrial: 10.87% Residential: 10.5%	35% max.	Residential: 8.50 Industrial: 8.80

[1]Range obtained from Prentice-Hall, *State Tax Guide*. Average mill levy below obtained directly from state taxation departments.
[2]Average effective tax rate as % of fair market value calculated by multiplying average mill levy by average actual assessment ratio for 1986.
[3]Estimate of mill levy for 1987, following reassessment, from Colorado Department of Local Affairs.
[4]Estimate of mill levy following reassessment and reclassification, Kansas Department of Revenue.
[5]As of January 1, 1989, Kansas statutory assessment ratios will be as follows: Residential: 12%, Commercial-industrial: 30%, Commercial and industrial machinery: 20%.
[6]Machinery used in manufacturing and computers are assessed at 30% of acquisition cost less depreciation. Other business personal property not taxed.

Source: Prentice Hall, *State Tax Guide*. Other information provided by state departments of revenue.

tive tax on business property. Iowa also makes special provisions for both residential and industrial property in urban "revitalization areas." Improvements made to industrial property can be fully exempted from the property tax for three years or partially exempted for ten years.

Missouri offers property tax abatements in blighted urban areas and in economically depressed areas qualifying as Enterprise Zones. Developers in designated blighted urban areas are eligible for a complete abatement of taxes on improvements for ten years and for a partial tax abatement for an additional 15 years. Within designated Enterprise Zones, localities must abate at least 50 percent of the property tax on improvements for 25 years; they may abate property taxes up to 100 percent.

Manufacturing and research and development firms operating in Oklahoma may receive tax relief for up to five years on the value they add to property. To qualify for property tax exemption, a firm must be new to Oklahoma or expand into a new facility.

Legislation passed by the Nebraska Legislature in 1987 offers limited property tax relief. Firms investing at least

$10 million and hiring at least 100 new employees in a business directly involved with the processing of agricultural products are eligible for a 15-year tax exemption on equipment.

1987 Colorado legislation allows localities to reduce property taxes of firms located in Enterprise Zones. Property tax abatements may not exceed the value the firm adds to the property. Additional guidelines have not yet been worked out.

Corporate Franchise and License Taxes

The corporate franchise tax is imposed on corporations for the privilege of conducting business in a state. Corporate franchise taxes are usually based on a firm's net worth. As Table 10 shows, Kansas, Missouri, and Oklahoma levy franchise taxes as a percentage of a firm's capital value. Nebraska levies a corporate occupation tax that ranges from $13 to $11,995, depending on the firm's capital value. In Iowa, the franchise tax applies only to financial institutions and is not applicable to industrial corporations. However, Iowa imposes a license fee that ranges from $15 to $3,000. Since many firms are multistate corporations, the taxable base of the franchise tax must be determined; the apportionment formula generally depends on the ratio of in-state assets to total assets.

Unemployment Insurance

Labor costs are the single largest expense for most firms. State mandated programs such as unemployment insurance and workers' compensation comprise a considerable portion of labor costs in many industries. Because participation in these programs is mandatory, this study treats them as taxes.

Unemployment insurance compensates a worker for wages lost while he or she is involuntarily unemployed yet willing and able to work. Employers must pay both federal and state unemployment insurance taxes, but the state tax is by far the largest. Although the federal government establishes broad regulations, the details of unemployment insurance programs are state-specific. The federal government requires reserve levels to maintain the solvency of each state's system. The states define the fundamentals, including eligibility rules, benefit provisions, administration, and financing. Both benefits and taxes vary widely among states.

Table 9
Property Taxes for a Hypothetical Firm

	Land, Build.	Machinery	Inventory	Total
Kansas				
Before Reassessment and Classification				
Asset Amt.	$250,000	$500,000	$100,000	$850,000
Tax Rate	0.1153	0.1153	0.1153	0.1153
Assess. Ratio	0.1	0.3	0.3	—
Effective Rate	0.01153	0.03459	0.03459	0.0278
Tax	$2,883	$17,295	$3,459	$23,636
After Reassessment and Classification				
Asset Amt.	$250,000	$500,000	$100,000	$850,000
Tax Rate	0.0933	0.0933	0.0933	0.0933
Assess. Ratio	0.3	0.2	0	—
Effective Rate	0.02799	0.01866	0	0.0192
Tax	$6,997	$9,330	$0	$16,328
Colorado				
Using Post-Reassessment Estimate of Property Tax Rate				
Asset Amt.	$250,000	$500,000	$100,000	$850,000
Tax Rate	0.0610	0.0610	0.0610	0.0610
Assess. Ratio	0.29	0.29	0	—
Effective Rate	0.017690	0.017690	0	0.0156
Tax	$4,423	$8,845	$0	$13,268
Iowa				
Asset Amt.	$250,000	$500,000	$100,000	$850,000
Tax Rate	0.0293	0.0293	0	0.0293
Assess. Ratio	1	0.3	0	—
Effective Rate	0.0293	0.00879	0	0.0138
Tax	$7,325	$4,395	$0	$11,720
Missouri				
Asset Amt.	$250,000	$500,000	$100,000	$850,000
Tax Rate	0.0426	0.0426	0	0.0426
Assess. Ratio	0.31	0.31	0	—
Effective Rate	0.013206	0.013206	0	0.0117
Tax	$3,301	$6,603	$0	$9,904
Nebraska				
Asset Amt.	$250,000	$500,000	$100,000	$850,000
Tax Rate	0.0241	0.0241	0	0.0241
Assess. Ratio	0.8772	1	0	—
Effective Rate	0.02114052	0.0241	0	0.0204
Tax	$5,285	$12,050	$0	$17,335
Oklahoma				
Asset Amt.	$250,000	$500,000	$100,000	$850,000
Tax Rate	0.081	0.081	0.081	0.081
Assess. Ratio	0.1087	0.1087	0.1087	—
Effective Rate	0.0088047	0.0088047	0.0088047	0.0088
Tax	$2,201	$4,402	$880	$7,484

Table 10
Franchise Tax

Colorado	None.
Iowa	5% of taxable income only on financial institutions. Corporate license tax ranges from $15 to $3000.
Kansas	0.1% of corporation shareholder's equity attributable to Kansas. Minimum tax: $20; maximum tax: $2,500.
Missouri	0.05% on value of outstanding capital stock and surplus. Minimum tax: $25.
Nebraska	Corporate Occupation Tax ranges from $13 to $11,995.
Oklahoma	0.125% on value of capital invested or used in Oklahoma. Minimum tax: $10; maximum tax: $20,000.

Source: Information provided by individual states.

Table 11
Average Unemployment Tax Rates, 1985

State	Taxes as a % of Total Wages
Colorado	1.18%
Iowa	1.87
Kansas	1.04
Missouri	1.01
Nebraska	.65
Oklahoma	.98

Source: U.S. Department of Labor, *ET Handbook 394, Unemployment Insurance Financial Data*, Supplement, March 1987; microfiche.

Because unemployment insurance payments depend on both firm-specific and state-specific characteristics, a comparison of unemployment insurance rates among the states is difficult. The unemployment insurance tax rate assigned to an employer depends on a firm's unemployment experience as well as the state's total unemployment compensation trust fund experience. Average state contributions as a percentage of total wages are shown in Table 11. Unemployment insurance rates are volatile, increasing and decreasing in accordance with the state trust fund's economic condition.

Workers' Compensation

Workers' compensation laws require firms to compensate workers or their families for injury or death related to employment. Although some state governments sponsor an insurance fund for workers' compensation, private companies provide this type of insurance in all six states considered in this study. Private firms fund an industry group, the National Council on Compensation Insurance, which does actuary work and suggests rates specific to each industry in a state. The suggested rates are subject to review by state insurance departments.

A number of factors influence workers' compensation rates schedule for a given state. These include the size of injury payments mandated by state law and the safety records of workers in the various industry categories. State regulation may limit rate increases.

A firms' premium depends on its individual accident history and its industry classification. Businesses with fewer accidents than their industry average qualify for refunds on premiums paid, and those with more pay additional premiums. Large total premiums entitle a policyholder to a volume discount. Table 12 shows that rates vary widely across states and industries. For most categories, Kansas workers' compensation rates appear typical for the region. The state average rate reflects both the insurance structure of the state and the composition of industries within the state.

The Tax Situation of a Typical Manufacturing Firm

The first part of this study pointed out the importance of tax credits, exemptions, and deductions in determining the amount of taxes a firm in Kansas or in other states in the region pays. The abundance of such incentives makes it difficult to compare the business tax structures of states, since so much of any firm's tax environment will depend on whether it meets the qualifications for various tax breaks. The second part of this study develops a methodology to analyze the impact of the tax structures in the region on the bottom-line tax payments of a typical manufacturing firm.

Several recent studies have used hypothetical firms in order to compare tax burdens among states. A 1983 study conducted by the Wisconsin Department of Revenue[5] constructs financial statements for representative firms in seven industries. Assuming that a firm's profits and property holdings are independent of the firm's location, the study calculates tax liabilities in several states. The study considers only long-established firms, and hence fails to capture the important impacts of economic development incentives. A study of Michigan's tax competitiveness[6] takes a similar approach, but includes adjustments for property tax abatements and for the interdependence of federal and state income taxes. A 1986 article by James Papke and Leslie Papke measures interstate tax differentials in terms of their impact on after tax profit rates.[7] The article compares the after-tax rate of return on investment in 16 industries across several states. It appears that the authors account for economic development incentives, although the description of methodology does not explain how incentives fit into their model. A West Virginia study[8] analyzes the non-tax costs

For most categories, Kansas workers' compensation rates appear typical for the region.

Table 12
Workers' Compensation Rates by Industry (per $100 payroll)*

Classification	Colorado	Iowa	Kansas	Missouri	Nebraska	Oklahoma
Auto Mfg. and Assembly	10.46	4.08	4.00	3.34	2.52	4.99
Drug Preparation	2.86	1.46	1.92	1.46	1.22	1.78
Printing	3.12	1.53	2.35	1.87	1.80	1.66
Metal Goods Mfg.	10.31	4.76	6.97	5.87	2.76	11.28
Plastics	4.34	3.52	4.43	3.64	2.70	4.13
Clerical Workers	.34	.17	.19	.22	.19	.35
State Average	3.08	1.84	1.81	1.73	1.59	3.26

*Applicable rates as of July 1987.

Source: Compiled from *Workers Compensation and Employers Liability*, National Council on Compensation Insurance, 1987. State averages from correspondence with National Council on Compensation Insurance, August 3, 1987.

of doing business for hypothetical firms in a number of industries. A forthcoming study will consider tax costs.[9] Finally, a report prepared for the State of Indiana[10] considers both tax and non-tax variables within a single model. Business costs in all 50 states are compared for 20 industries. This study again concentrates on established firms and ignores the impact of development incentives.

Three important aspects of this study improve upon related work. First, the study carefully incorporates the impact of economic development incentives. This requires that new and expanding firms be distinguished from long-established firms. The study concentrates on new enterprises, calculating tax liabilities for a representative manufacturing firm. Firms are assumed to qualify for all tax based economic development incentives, including Enterprise Zone credits. Second, the study calculates tax liabilities in "present value"[11] terms. This feature allows comparison of tax incentives of different durations. For example, Nebraska allows a large $1,000 new employee tax credit in the first year that a firm operates. Kansas, on the other hand, grants a much smaller credit, but extends it for up to ten years. Accurate interstate comparisons require several years of tax projections. Present value calculations also allow adjustments to be made for scheduled tax changes not yet in effect. Finally, this study fully accounts for the "federal offset" to state and local taxes. State and local taxes are deductible from federal gross income for corporations, so federal taxable income and federal income taxes will differ across the states. In states where state and local taxes are low, federal income taxes will be high. The differences between the states due to state and local taxes will be in part offset by counterbalancing differences in federal taxes.

Table 13 shows the profile of a hypothetical firm. It includes the number of employees, annual payroll, materials costs, capital stock, and sales. The *Annual Survey of Manufactures, 1985* provides most of the data used to construct the profile.[12] Data on buildings and machinery have been adjusted to reflect differences between the book value of assets and their current value. The manufacturing data reveal that the median-sized establishment in the United States has about 12 employees; this is the firm size chosen for the analysis.[13]

Throughout this study, it is assumed that costs other than taxes are independent of the firm's location. The study shows only the impact of taxes on a firm's bottom line profits. Clearly, differences among states in the costs of labor, energy, land, and transportation can have an impact on profits at least as large as that of state and local taxes. A complete analysis of business costs, while beyond the scope of this study, would give further insight

Table 13
Profile of a Typical Manufacturing Firm

Number of Employees	12
Total Sales	$1,455,446
Total Labor Costs	$338,005
Payroll	$282,890
Social Security	$20,227
Fringe Benefits	$34,888
Materials Costs	$836,044
Total Rent	$7,991
Total Assets	$739,232
Land	$17,177
Buildings	$171,769
Machinery	$344,486
Inventory	$205,800
Investment to Replace Machinery (after first year)	$28,707

Table 14
Taxes Over 15 Years for a Typical New Manufacturing Firm (present value, 10 percent discount rate)

	Kansas	Colorado	Iowa	Missouri	Nebraska	Oklahoma
CASE 1: A FIRM RECEIVING ALL ALLOWABLE TAX INCENTIVES						
Income						
Federal Taxable Income	$1,287,577	$1,255,344	$1,267,926	$1,313,859	$1,242,103	$1,257,096
Annualized	$153,893	$150,041	$151,545	$157,034	$150,254	$150,250
Taxes						
Federal Income Tax	$374,753	$362,182	$367,089	$385,003	$357,018	$362,866
State Income Tax	34,055	16,398	3,521	(13,810)	6,931	33,781
Unemployment and Workers' Compensation	32,633	48,777	42,480	31,373	25,648	48,548
Property Tax	20,066	51,740	50,395	37,203	92,397	29,534
Franchise or License	2,959	0	570	8,888	2,445	7,028
Sales Tax on Machinery	0	0	0	0	10,574	0
Total	$464,466	$479,098	$464,055	$448,657	$495,012	$481,756
Annualized	$55,514	$57,263	$55,465	$53,624	$59,880	$57,580
CASE 2: A FIRM RECEIVING NO TAX INCENTIVES						
Income						
Federal Taxable Income	$1,180,369	$1,196,245	$1,231,374	$1,252,140	$1,222,797	$1,210,896
Annualized	$141,080	$142,977	$147,176	$149,658	$147,918	$144,728
Taxes						
Federal Income Tax	$332,942	$339,134	$352,834	$360,933	$349,489	$344,848
State Income Tax	51,494	33,245	6,402	6,261	13,235	43,723
Unemployment and Workers' Compensation	32,633	48,777	42,480	31,373	25,648	48,548
Property Tax	92,060	72,480	64,980	56,488	92,397	47,338
Franchise or License	2,959	0	570	8,888	2,445	7,028
Sales Tax on Machinery	25,271	31,453	25,271	31,589	27,798	25,271
Total	$537,359	$525,088	$492,536	$495,531	$511,012	$516,755
Annualized	$64,226	$62,759	$58,869	$59,227	$61,816	$61,763

into the competitiveness of the Kansas business climate.

The profile of the hypothetical firm provides information for calculating most important business taxes, including federal and state corporate income taxes, unemployment taxes and workers' compensation, property taxes, franchise taxes, and sales taxes on business purchases. Briefly, property taxes and franchise taxes are based on the firm's assets, business sales taxes are based on the firm's original investment purchases plus calculated replacement investment, and income taxes are based on sales minus costs.

This study concentrates on the tax liabilities of firms that open new facilities. The examination of new and expanding businesses focuses the study on the role of business taxes in Kansas's ability to compete for new jobs and investment. This is not meant to imply that the tax climate of a state is unimportant to long-established firms. However, a long-established firm will probably be less sensitive to tax climate than a new firm will. The established firm generally has a large investment sunk into its existing facility, a cost that would be difficult to recover shouid the firm change locations. States target economic development incentives almost exclusively at new or expanding firms, in part insulating these firms from the basic structure of income and property tax rates.

A new manufacturing firm opening in Kansas pays taxes that are average for the region.

It is in a setting where all else is equal that taxes could be decisive. In other words, a state with relatively high taxes must have cost advantages in labor or materials, a location with good communication and transportation facilities, or excellent quality of life to attract business.

Conclusions of the Hypothetical Firm Analysis

Based on the profile in Table 13, detailed taxes can be calculated for the typical firm's first 15 years of operation. The following assumptions aid in the analysis:

1. The firm maintains a constant number of employees and capital stock over the period.

2. After the initial period, investment replaces depreciated plant and equipment.

3. The firm qualifies for the most advantageous development incentives available in each of the states.

4. The firm maintains 100 percent of its property, 100 percent of its payroll, but only 10 percent of its sales in-state.

The fourth assumption focuses the study on export oriented firms, the firms states are likely to compete for.

A new manufacturing firm opening in Kansas pays taxes that are average for the region. Kansas taxes for new firms rank third lowest among the six states based on the typical firm study. Table 14 provides insight into the sources of interstate tax differentials. First, property tax abatements offer a significant source of tax savings. Nebraska, the only state in the region without such abatements, shows substantially higher property taxes than its neighbors. Second, income taxes vary widely across the states. Oklahoma and Kansas, the two states in the region to rely on the three-factor formula, levy relatively high income taxes on an export oriented firm. Notice that state income taxes in Missouri are actually negative; this is due to provisions that allow refunds of excess job and investment credits. Finally, federal taxes reduce the impact of state and local tax differences due to the "federal offset" discussed earlier. A firm operating in a state like Missouri pays relatively low state and local taxes, but relatively high federal income taxes.

This analysis also provides a convenient way of quantifying the impact of tax based incentives. Table 14 includes the results of a simulation that eliminated property tax abatements, job and investment credits, and sales tax exemptions on plant and equipment. This simulation approximates the tax burden for a long-established firm that fails to qualify for most development incentives. In the absence of special credits and abatements, Kansas taxes are the highest in the region. Two features stand out. A firm operating in Kansas would pay relatively high property taxes, and an export oriented firm would pay high state income taxes. Table 14 shows the contrast of the tax burden for a firm receiving all the tax benefits and the same firm when it does not. Tax based development incentives save a typical new firm the equivalent of about $8,700 per year, or $725 per employee, throughout the firm's first 15 years of operation. Since other states in the region offer substantial tax inducements, it would be difficult for a single state to eliminate tax incentives.

Conclusions

Are Kansas taxes competitive? For new and expanding business, tax incentives for labor and capital are generous, especially in Enterprise Zones. Kansas taxes rank third lowest in the region for a typical small to medium-sized manufacturing firm. On the basis of taxes alone, Kansas should be a favorable site for expansion. For established firms, the Kansas tax climate appears less favorable. For firms that do not qualify for credits or abatements, Kansas property and income taxes are among the highest in the region. Of course, firms look at factors other than taxes. It is in a setting where all else is equal that taxes could be decisive. In other words, a state with relatively high taxes must have cost advantages in labor or materials, a location with good communication and transportation facilities, or excellent quality of life to attract business.

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Notes

1. The complete report of the study done for Kansas Inc. contains a comparison of the tax structures in the region and an analysis of the taxes paid by typical firms in nine industries. Pat Oslund, Darwin Daicoff, and Shirley Sicilian, *How Well Does Kansas Compete? A Comparison of the Business Tax Structures of Kansas and Nearby States*, Monograph Series, nos. 130 and 131 (Lawrence, Kansas: Institute for Public Policy and Business Research, University of Kansas, January 1988).

2. This conclusion is supported by the theoretical results of Peter Mieszkowski and George R. Zodrow, "The Incidence of a Partial State Corporate Income Tax," *National Tax Journal* 38 no. 4 (December 1985): 489-496. The authors present a model in which firms sell in national markets. If a state imposes a corporate tax with a factor allocation formula including labor and capital, production moves from the taxing state to jurisdictions where these factors are untaxed.

3. Kansas Department of Revenue, Division of Property Valuation, *Real Estate Assessment/Sales Ratio Study, 1986*, (1986), 30.

4. The Kansas Department of Revenue estimates that the average state mill levy will be 93.3. The effective mill levies were calculated by multiplying the average mill rate by the statutory assessment ratios of 30 percent for commercial-industrial property and 12 percent for residential property.

5. Wisconsin Department of Revenue, *Corporate Tax Climate: A Comparison of Sixteen States* (Madison, WI: Wisconsin Department of Revenue, February, 1983).

6. Timothy L. Hunt, *Michigan's Business Tax Costs Relative to the Other Great Lakes States*, (Kalamazoo, Michigan: W.E. Upjohn Institute for Employment Research, February 1985).

7. James A. Papke and Leslie E. Papke, "Measuring Differential State-Local Tax Liabilities and Their Implications for Business Investment Location," *National Tax Journal* (September 1986): 357-366.

8. Robert Walker and Frank Calzonetti, *The Cost of Doing Business in West Virginia: Non-Tax Costs* (Morgantown, West Virginia: Center for Economic Research, West Virginia University, April 1987).

9. West Virginia Research League, *The Cost of Doing Business: The Tax Burden* (West Virginia Research League, forthcoming).

10. Barry M. Rubin and C. Kurt Zorn, *A Comparative Analysis of Interstate Variation in Manufacturing Industry Business Costs* (Bloomington, Indiana: Center for Urban and Regional Analysis, Indiana University, June 1983).

11. The present value of one dollar to be received (or paid) at a time t years from now is the amount that a person would accept (or pay) today in lieu of the transaction at the future date. Present value calculations make corrections for the effect of time. Present value calculations can be converted to equivalent annual income streams. For a more detailed explanation, see William J. Baumol and Alan S. Blinder, *Microeconomics: Principles and Policy*, 3d ed. (San Diego, California: Harcourt Brace Jovanovich, 1986), pp. 388-389, or most introductory economics texts.

12. The details of the tax calculations for typical firms are spelled out in Pat Oslund, Darwin Daicoff, and Shirley Sicilian, *How Well Does Kansas Compete? A Comparison of the Business Tax Structures of Kansas and Nearby States*, Monograph Series, nos. 130 and 131 (Lawrence, Kansas: Institute for Public Policy and Business Research, University of Kansas, January 1988).

13. Because of its small size, the firm fails to qualify for the most generous credits offered in Nebraska. For new firms which invest over $3 million and create at least 30 jobs, the Nebraska tax incentives effectively eliminate the state corporate income tax.

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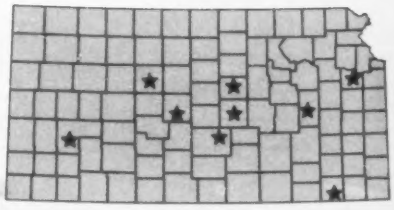
Business Retention and Expansion in Kansas Mid-Sized Communities



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Introduction

In the past three to four years Kansas, like many other states, has focused on initiating and funding economic development activities. Strategies have been designed for improving infrastructure, creating and distributing investment capital, and encouraging firms from outside the state to locate in Kansas. The emphasis of Kansas economic development strategy, however, has been shifting to encouraging retention and expansion of existing firms. Identifying problems that may cause a firm to relocate or forego expansion is critical to state economic efforts, and knowing what encourages business expansion and retention helps authorities at state and local levels take advantage of development opportunities.

At the request of the Kansas Department of Commerce, the Institute for Public Policy and Business Research analyzed business retention and expansion in representative Kansas communities of 10,000 to 100,000 persons (referred to as Kansas mid-sized communities in this study) with the goal of discovering the important determinants of this type of economic growth. Mid-sized communities were studied because by their very number they are crucial to the economic future of the state, but compared with metropolitan areas, their access to information and their implementation capabilities are inadequate for substantial and sustained expansion. Specifically, the purpose of this study was to find the major influences on retention and expansion of existing industries in Kansas mid-sized communities, to identify the potential of Kansas firms to expand within their own communities, to establish local efforts to encourage retention and expansion, and to identify state policy that influences retention and expansion.

Survey Methodology[1]

Survey findings are from a disproportionate stratified probability sample of businesses in Kansas communities with populations between 10,000 and 100,000. Cities that are part of an urban area, like Overland Park or Prairie Village, were excluded.

To assure coverage of the entire state, these communities were divided into six geographic regions corresponding to Department of Commerce districts. The nine communities randomly selected from these six regions were Emporia, Great Bend, Garden City, Coffeyville, Hays, Hutchinson, Lawrence, McPherson, and Salina.

Once the communities were selected, businesses in each one were surveyed. This research examined only businesses that buy or sell in a region larger than the specific community. All retail businesses were excluded unless the business was a regional headquarters, distribution center, or manufacturer. These determinations were based on Standard Industrial Codes (SIC) for each business. Because they are already a primary focus of state economic policy, manufacturing firms were over-sampled, providing greater accuracy in their analysis. Results from manufacturing firms were weighted to eliminate biasing of the overall findings.

Once firms were selected for the sample, letters were sent to the highest administrative official at the local firm. These were followed by a telephone call to initiate the interview. Of those contacted, 92 percent agreed to participate in the study, a very high response rate. Interviews were conducted between mid-August and mid-October 1987.[2]

The findings are based on 858 completed interviews.[3] This large sample provides a solid base for generalizing to all nonretail businesses in Kansas mid-sized communities: At the 95 percent level of confidence, the actual characteristics in the population of non-retail businesses should vary less than 3.5 percent from the figures in the sample. The sampling error in the individual communities is much larger, plus or minus 10 percent.

Slow growth in employment and relatively fast growth in the number of establishments shows that growth in Kansas has depended on smaller businesses rather than on big companies.

Economic Growth in Kansas

Before discussing the survey results, it is necessary to review several economic trends for Kansas. This section will provide a context for the survey results, with a view of the entire state and of the counties of the nine communities.

Employment Growth

Between 1978 and 1986, total employment in Kansas grew 8 percent, only half the rate of U.S. employment growth during the same period. Of the nine communities surveyed, Lawrence and Garden City were the only ones in counties where employment grew faster than it did in Kansas. No other county had an employment growth rate higher than 6 percent, and two counties (Montgomery and Reno) lost employment (see Table 1). The slow growth in the number of jobs will eventually increase out-migration, as people are forced to move away to find work. These county employment growth figures, compared with those for Kansas and the United States, demonstrate that economic development strategies are still very important to the state and its many mid-sized communities.

Number of Establishments

The total number of establishments for Kansas grew 21 percent from 1978 to 1985, which was lower than the rate for the United States. Of the nine counties where survey communities are located, Douglas County had the highest 1978-1985 establishment growth rate. No county had a rate lower than 9 percent.

Slow growth in employment and relatively fast growth in the number of establishments shows that growth in Kansas has depended on smaller businesses rather than on big companies. Communities should note this trend: They may profit more by helping small companies develop than by focusing exclusively on large firms.

To further illustrate this point, between 1980 and 1985 Kansas establishments with fewer than 50 employees increased employment by 6 percent (21,486 jobs), while employment decreased 1 percent in firms with more than 50 employees. Small businesses are more important in Kansas than they are in the nation. In 1985, businesses with fewer than 50 employees accounted for a higher percentage of establishments, jobs, and payroll in Kansas than in the nation as a whole.[4]

Table 1
County Growth in Employment, Number of Establishments, and Personal Income, 1978 to 1986

County	Employment	Establishments	Personal Income
Barton (Great Bend)	0%	14%	92%
Douglas (Lawrence)	14	36	69
Ellis (Hays)	6	22	93
Finney (Garden City)	51	31	116
Lyon (Emporia)	0	22	71
McPherson (McPherson)	6	10	73
Montgomery (Coffeyville)	−15	9	57
Reno (Hutchinson)	−6	14	65
Saline (Salina)	1	11	72
Kansas	8	21	75
United States	15	34	71

Sources: Employment—Kansas Department of Human Resources Research and Analysis Section, Bureau of Labor Statistics Industry Employment Data Section. Establishments—*Kansas County Business Patterns, United States County Business Patterns.* Personal Income—Bureau of Economic Analysis Regional Economic Information System, U.S. Bureau of Economic Analysis, The National Income and Product Accounts of the U.S.

Personal Income Growth

Personal income has grown rapidly in Kansas, in the nine counties as well as the state. From 1978 to 1984, Kansas personal income grew 75 percent, which is more than in the United States (see Table 1). Personal income in the nine counties where the surveyed cities are located increased at least 57 percent during the same period. This rapid personal income growth is a positive sign for the state. It will be important to maintain these income levels, emphasizing keeping and creating jobs that have provided such growth.

The Need for Action

In recent years the economies of Kansas mid-sized communities have performed worse than the Kansas economy. Employment growth in Kansas mid-sized communities has lagged behind employment growth in Kansas and the United States. These communities are particularly important for the future since they serve as regional centers within the state. Designing and implementing appropriate economic development strategies to help these communities should be a priority.

The Survey Population

Firm Size and Total Annual Sales

For the 858 firms that participated in the survey, size of companies ranged from one employee to 1,471 employees, and companies represented the agriculture, mining, construction, manufacturing, transportation-communications, wholesale, finance, and services industries. Data were analyzed through size and industry breakdowns.

The majority of companies that participated in the survey were small and had low total annual sales. Seventy-eight companies had fewer than 20 employees,

The majority of companies that participated in the survey were small and had low total annual sales.

and of those firms that released sales figures, 85 percent had total annual sales of less than $5 million (see Table 2). This pattern was not industry-specific: In all industries a majority of firms had fewer than 20 employees and sales of less than $5 million. However, as one would expect, the larger firms had higher annual sales.

Although it is true that retention and expansion of large firms is important, state strategy that exclusively emphasizes the large firm will miss a great area of potential growth. In Kansas mid-sized communities, small firms are significant to the economy, and they should be included in development efforts. Total annual sales data show that small, low revenue firms predominate in these communities.

Table 2
Survey Firms' Size and Total Annual Sales

Community	Number of Employees 1-19	20-49	50+	Total Annual Sales (in millions of dollars) 0-4.9	5-9.9	10-19.9	20+
Coffeyville	78%	9%	13%	82%	4%	4%	10%
Emporia	75	12	13	81	5	11	3
Garden City	81	9	10	85	5	5	5
Great Bend	85	11	4	94	2	3	1
Hays	86	9	5	92	0	5	3
Hutchinson	78	12	10	78	6	8	8
Lawrence	73	17	10	87	7	2	4
McPherson	76	10	14	88	2	5	5
Salina	70	16	14	79	13	6	2
All 9 Communities	78%	12%	10%	85%	5%	5%	5%
	n = 858			n = 625			

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

Location of Headquarters

As might be expected with such a large number of small firms, most businesses are single establishments rather than part of a larger corporation. Of firms that responded, 65 percent are single establishments. Of the 34 percent that are part of a larger corporation, half have headquarters in Kansas, and half have headquarters outside the state (see Table 3). For the most part, retention and expansion decisions will be made within the community and in the state, not by parent organizations in other areas. This implies that through local development strategies, community officials can affect business retention and expansion.

The predominance of single establishment companies has many implications for the state. Policy must address the single establishment firm as well as the large corporations that have operations in Kansas. Much of the economic future of Kansas mid-sized communities depends upon their small, single establishment companies. To design policy that ignores these firms or helps large firms at the expense of small ones will not maximize business retention and expansion.

Special efforts are required to inform these small, single establishment firms of available assistance, and such assistance should include information on financing, new technologies, and gaining access to international trade. Not only do small businesses have fewer resources for obtaining the information they need to grow and to expand their markets, but most of these companies are far from major population centers, which increases the difficulty of obtaining timely information.

Table 3
Location of Headquarters (Kansas/Non-Kansas)

Community	Kansas Headquarters*	Non-Kansas Headquarters*	Headquarters Location Not Given	Single Company Firm
Coffeyville	14%	16%	0%	70%
Emporia	18	16	1	65
Garden City	19	16	1	64
Great Bend	15	17	1	67
Hays	21	14	0	65
Hutchinson	19	17	2	62
Lawrence	24	18	0	58
McPherson	11	21	0	68
Salina	24	18	0	58
All 9 Communities	17%	17%	1%	65%

n = 854

*These firms are part of a larger corporation.

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

Scope of Products Sold

The firms surveyed sell their products and services in a fairly limited market. Firms sold a mean, or average, 55 per-

cent of their products and services locally and 1 percent internationally (see Table 4). Moreover, only about 18 percent of sales for all firms were outside Kansas. Size breakdowns revealed that larger firms sell to broader markets than small firms.

These mean percentages demonstrate the local orientation of the firms surveyed, a significant finding since a state's competitiveness and economic future depend on the ability to export and to participate in many markets, especially the international market. In Kansas mid-sized communities this is not happening: The distribution of products is oriented to the local and state markets. Firms in these communities should be encouraged to market their products and services outside Kansas. To do otherwise would seriously limit growth.

Business Location and Retention

New Firms from Outside the Community

Regardless of size or industry, there has not been an influx of companies to these communities from other cities or states. Ninety-four percent of respondents stated they had not moved to their present location from another city or state in the past five years (see Table 5). Hutchinson was an exception: There, 14 percent of respondents stated their firm had moved to the community in the past five years. For the other communities, however, the predominance of homegrown and long-established firms probably intensifies the local focus of these communities and leaves them with little first-hand knowledge of markets in other areas or regions.

Efforts to influence out-of-city or out-of-state companies to relocate in these communities have been ineffective: Only about 1 percent of all companies relocate from outside the community each year, indicating that industrial recruitment has not been a successful strategy for the Kansas mid-sized community. Although the recruitment of firms from outside Kansas should constitute one part of the state's and communities' economic development strategy, the major strategic focus should be on establishing new firms and expanding existing businesses.

Reasons for Location

Businesses in Kansas mid-sized communities are home grown, and they see their communities as providing the market and location they need. Fifty-four percent of respondents that gave reasons for location stated that the community was the owner's hometown, and 46 percent said that their community filled a product/service need for their company (see Table 6). Business representatives gave many explanations for locating in their hometown: "This business has been in the family since World War II;" "We stay here to fill the local need for our product;" and "I have worked here for many years, and I took over from the previous owner; This company was available." Other major reasons for location were that the community provided a central location, the community provided good access to markets, and the community filled a product or service need.

Once again, the data show respondent firms to be home grown and oriented toward the local area. Most respondents were not influenced by factors like tax incentives, a good local labor pool, and good access to raw materials. The predominance of small hometown firms indicates that the climate for entrepreneurship is good. Efforts to encourage entrepreneurial enterprise may foster additional business start-ups and expansion. Indeed, growth of Kansas mid-sized communities depends on their ability to encourage en-

Table 4
Product Markets: Average Percentages Sold in Local, State, National, and International Markets

Community	Local Market	State Market	National Market	Internat'l Market
Coffeyville	53%	20%	27%	1%
Emporia	61	18	20	1
Garden City	59	26	14	1
Great Bend	50	39	10	1
Hays	52	38	9	1
Hutchinson	50	31	17	2
Lawrence	60	16	21	3
McPherson	51	23	25	1
Salina	60	24	14	2
All 9 Communities	55%	27%	17%	1%

n = 852

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

Table 5
Percent of Firms That Have Moved to the Community Within the Past Five Years

Current Location	
Coffeyville	3%
Emporia	1
Garden City	3
Great Bend	5
Hays	6
Hutchinson	14
Lawrence	7
McPherson	5
Salina	8
All 9 Communities	6%

n = 856

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

Table 6
Reasons for Location in the Community

	Coffeyville	Emporia	Garden City	Great Bend	Hays	Hutchinson	Lawrence	McPherson	Salina	Total
Hometown	66%	56%	46%	51%	56%	53%	51%	56%	55%	54%
Filled a product/service need	34	62	53	29	58	37	57	32	50	46
Central location	27	42	49	54	46	38	52	34	45	44
Good access to markets	21	19	47	25	32	24	27	21	15	26
Strong local economy	6	10	10	8	10	7	11	12	2	9
Affordable lease purchases	7	14	3	12	8	13	5	9	8	9
Good access to raw materials	4	0	11	19	12	8	4	6	2	8
Good transportation facilities	9	8	2	6	13	7	9	4	9	7
Good local labor pool	3	4	1	4	10	6	18	9	7	7
Adequate space for expansion	4	6	2	1	6	8	8	3	4	5
Near educational facilities	0	3	0	0	5	1	13	1	0	3
Receptive local government	1	3	0	0	1	2	1	7	2	2
Tax incentives/public financing	2	0	0	0	1	0	4	2	2	1
Suitable zoning	0	0	0	0	1	1	0	0	0	1
Small town, rural life	2	1	0	0	1	0	0	2	0	1

n = 851

*Since firms could give more than one reason, total percentages may not add to 100%.

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

trepreneurship rather than on luring in business from outside the community.

Businesses Leaving the Community

The number of survey respondents planning to move is quite small, and many firms that are moving are simply relocating within their community. Only 5 percent of respondents stated they will move; 2 percent are moving within their community (see Table 7). Although these results indicate that most respondents are satisfied with their communities, local and state retention programs should be continued, focusing on the small number of respondents who are planning to leave their community or Kansas.

Perception of Rural Life and of Kansas

There does seem to be a slight problem in attracting and retaining management personnel to Kansas mid-sized communities, a problem which could limit the

Table 7
Where Survey Respondents are Planning to Move

Respondents' Current Community	Within the Community	Within the State	Out of State	Total Moving
Coffeyville	0%	0%	4%	4%
Emporia	5	0	2	7
Garden City	3	1	0	4
Great Bend	0	1	0	1
Hays	1	2	2	5
Hutchinson	4	0	1	5
Lawrence	1	1	2	4
McPherson	1	2	1	4
Salina	2	0	1	3
All 9 Communities	2%	1%	2%	5%

n = 856

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

Regardless of size or industry, respondents are optimistic about their expansion capabilities.

Table 8
Percent of Respondents Reporting Image Problems

	Difficulty Attracting Managers	Negative Image of Rural life	Negative Image of Kansas
Coffeyville	26%	7%	1%
Emporia	22	10	1
Garden City	15	5	2
Great Bend	11	4	0
Hays	14	7	3
Hutchinson	18	6	2
Lawrence	15	4	1
McPherson	12	4	2
Salina	19	6	1
All 9 Communities	17%	6%	2%

n = 856

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

competitiveness of these firms. Seventeen percent of respondents said their firm had this problem (see Table 8). Respondents in Coffeyville and Emporia had particular difficulty with attracting management personnel. According to industry breakdowns, the difficulty firms experience in attracting and retaining managers and professionals does not vary across industries. This finding implies that the source of the difficulty is the community or area, not the type of firm. Larger firms had more problems with retention and attraction than smaller firms had, probably because larger firms need more professional and managerial personnel.

Respondents from larger firms also had a slightly more negative view of rural life and of Kansas than respondents from smaller firms had. In general, however, survey results did not reveal problems with the image of Kansas or of rural life. For all respondents, 94 percent stated they did not have a negative image of rural life, and 98 percent stated they did not have a negative image of Kansas (see Table 8).

The data concerning images of rural life and Kansas stem from the hometown nature of these firms and from their dependence upon local and statewide customers. These results imply that state promotions stressing the quality of Kansas mid-sized communities or of the state will probably not improve business retention and expansion because most firms are already pleased with rural life and with Kansas.

Larger firms, however, are likely to have more trouble retaining and attracting managers and professionals, and they have problems with the image of rural life and of Kansas. Once the human capital needs of a business can no longer be met by the local labor pool, these problems may keep companies from growing or result in businesses moving to communities that are more attractive to managers. Communities must address the concerns of larger companies or risk losing them as they grow. The loss of a major employer would hurt its suppliers and the community. High quality of life, particularly a strong arts environment, will be important in attracting managers and professionals and improving perceptions of the mid-sized communities and of Kansas.

Business Expansion

Past Expansion

In the past two years, most firms have held employment and physical plant size constant, although some expanded. Of all respondents, 33 percent increased employment, and 35 percent increased physical plant size (see Table 9). Employment and plant size increased notably in Lawrence and Emporia, while businesses in

Table 9
Changes in Employment and Physical Plant Size, 1986 to 1987

	Employment			Physical Plant Size		
Community	Decreased	No Change	Increased	Decreased	No Change	Increased
Coffeyville	20%	44%	36%	7%	58%	35%
Emporia	14	50	36	5	49	46
Garden City	20	54	26	8	61	31
Great Bend	44	38	18	23	52	25
Hays	35	41	24	17	53	30
Hutchinson	18	49	33	7	62	31
Lawrence	11	35	54	3	55	42
McPherson	16	46	38	7	61	32
Salina	15	51	34	4	54	42
All 9 Communities	22%	45%	33%	9%	56%	35%

n = 858

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

Great Bend and Hays contracted. In each community, firms with 20 or more employees expanded more than smaller firms. Nevertheless, while employment was increasing in Kansas, 22 percent of all respondents said their firm decreased employment.

As a comparison of Table 5 and Table 9 will show, there has been expansion in these communities, but very little has come from recruitment of firms from other cities or states. Economic growth in these cities results from expansions of existing companies and formation of new firms within the community, so state and local policies should encourage local entrepreneurs who are starting new businesses and expanding existing businesses.

Smaller firms decreased employment and physical plant size more than larger firms did. Their reliance on local markets may be limiting their expansion. If most smaller firms remain predominately oriented toward the local market, their employment and physical plant size gains will continue to be lower than those for larger firms.

The reasons respondents gave for past growth or lack of it emphasize the importance of markets. Of the 239 respondents that gave specific problems with expansion, 42 percent said a static or declining market was a problem, and of the 371 respondents that gave factors that helped expansion, 69 percent said that an expanding market was a factor. Finally, of the 187 respondents that gave reasons for contraction, 72 percent said that a declining or static market was a reason. Clearly, the markets in which goods or services are sold affects expansion in these communities. Again, it is important for firms to expand their markets and orientation.

Table 10
Plans for Changes in Employment and Plant Size During 1988

	Employment			Physical Plant Size		
Community	Decrease	No Change	Increase	Decrease	No Change	Increase
Coffeyville	4%	57%	39%	4%	74%	22%
Emporia	0	64	36	1	76	22
Garden City	2	59	40	0	80	20
Great Bend	2	56	42	2	79	19
Hays	4	52	44	4	77	19
Hutchinson	5	58	37	0	75	25
Lawrence	3	58	39	1	70	29
McPherson	4	56	40	2	72	26
Salina	4	51	45	0	83	17
All 9 Communities	3%	56%	41%	1%	77%	22%

n = 857

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

Plans for Expansion

Respondents are optimistic about their firms' abilities to retain or increase employment. Only 3 percent of respondents will decrease employment next year, and 41 percent stated they will increase employment (see Table 10). Respondents are also optimistic about plant size growth: 22 percent stated their firm will expand plant size next year, and only 1 percent said their firm will contract in size next year. Larger firms will increase both employment and physical plant size more than smaller firms, and more respondents in manufacturing, finance, and services expect to expand. A large percentage of surveyed firms in Salina, Hays, and Great Bend are planning employment increases, while a large percentage of surveyed firms in Lawrence, McPherson, and Hutchinson are planning plant size expansions next year.

Regardless of size or industry, respondents are optimistic about their expansion capabilities. This is an excellent time for the state to encourage firms in Kansas mid-sized communities to expand their physical plant. The state must make sure that these companies realize their expectations for growth, giving Kansas mid-sized communities the opportunity to retain their population and to add new jobs.

Table 11
Potential and Desire to Expand into International Markets

	Percent of Respondents with	
Community	Potential	Desire
Coffeyville	16%	17%
Emporia	10	10
Garden City	12	10
Great Bend	15	15
Hays	11	13
Hutchinson	14	12
Lawrence	18	13
McPherson	12	11
Salina	14	13
All 9 Communities	14%	13%
	n = 776	n = 775

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

Expanding Into the International Market

Businesses can improve the economies of Kansas mid-sized communities by offering new or existing products internationally. Of those respondents whose firms did not export, 14 percent stated that their firm had the potential to expand internationally, and 13 percent stated their firm had the desire to expand internationally (see Table 11). Respondents

Table 12
Financing Sources for Expansion*

	Coffeyville	Emporia	Garden City	Great Bend	Hays	Hutchinson	Lawrence	McPherson	Salina	Total
Bank	61%	54%	58%	51%	74%	43%	48%	53%	49%	54%
Internal financing	44	49	45	55	44	64	57	49	54	52
Private sources	7	0	6	10	1	12	14	2	4	7
Industrial Revenue Bonds	9	4	4	0	0	3	4	10	7	4
Small Business Administration	4	2	4	1	4	1	4	7	4	3
Savings & loan	0	2	2	7	4	1	3	2	3	3
Credit union	0	2	4	0	4	2	0	0	4	2
Certified Development Corp.	0	2	0	0	0	0	0	0	0	1

n = 828

*Since firms could give more than one reason, total percentages may not add to 100.

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

from manufacturing and finance firms were particularly positive about exporting. There are already business people in Kansas mid-sized communities with the potential and the desire to export. It is important that they know where to get export assistance and how to initiate such ventures. To disregard smaller companies as exporters would be a mistake: Even respondents from firms with fewer than 20 employees expressed the potential and/or desire to expand internationally. If this export potential is not realized, and the desire to export is not encouraged, both markets and products for many companies will remain narrow and locally oriented.

Financing

Financing for expansion in Kansas mid-sized communities comes from traditional sources. Fifty-four percent of respondents had bank loans, and 52 percent used internal financing (see Table 12). A higher percentage of small firms and firms in construction and agriculture used bank financing.

The respondents do not seem to have access to seed, medium, or high risk financing. A first step in helping firms expand would be to make sure that firms know about nontraditional sources for financing expansion. Firms may be comfortable with bank loans and internal funding, but financing for increased expansion efforts must come from alternative sources. Improved access to nonconventional sources of financing should be a high priority for the state.

The majority of these surveyed firms do not go outside Kansas for financing. Ninety-one percent of these respondents said that in the past five years their firm did not go outside Kansas to receive financing for expansion (see Table 13). Conforming to the pattern established in these survey results, larger firms did go outside the state for financing more than smaller firms did.

In addition, some firms have had to

Table 13
Financing Expansion, 1982-1987

	Percent of Firms	
	Forced to Go Outside Kansas for Financing	Foregone or Postponed Expansion Due to Lack of Financing
Coffeyville	10%	16%
Emporia	10	11
Garden City	8	11
Great Bend	8	15
Hays	12	19
Hutchinson	11	7
Lawrence	13	6
McPherson	7	8
Salina	5	6
All 9 Communities	9%	11%
	n = 847	n = 849

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

forego or postpone expansion because of a lack of affordable financing. Of these respondents, 11 percent said their firm had not been able to expand because of this lack of financing. There were no real differences in the results for different sized firms, but more firms in Hays had problems than firms in the other eight communities.

Although their numbers are few, some firms are having, or have had, trouble financing expansion. The state can increase business expansion by ensuring that information about alternative financing is adequately disseminated.

Business Climate

Quality of Life

A very high percentage of respondents are pleased with the quality of life in their communities. Eighty-two percent of respondents rated the quality of life as good, 16 percent rated it adequate, and only 1 percent rated it poor (1 percent had no opinion). There were no significant differences between different sized firms or between firms in different industries. In their efforts to encourage business retention and expansion, Kansas mid-sized communities can build upon the respondents' positive evaluation of quality of life in their communities.

Attitude of the Local Government

The attitude of the local government toward the business community was viewed by most firms to be positive. Only 10 percent of the respondents thought their local government had a negative attitude toward business (see Table 14). Compared with respondents from smaller firms, respondents from firms with 100 or more employees were more likely to believe the local government had a negative attitude toward local business.

From the high percentage of respondents who rated the attitude of local government toward local business as neutral, we may infer that local government is perceived to have little effect upon business practices in the community. Since few respondents gave local government a negative rating, we might expect local business to be receptive to local government efforts to promote growth, and this might be a good time for local government to more vigorously pursue such goals.

Table 14
Perceptions of the Attitude of Local Government Toward the Local Business Community

Community	Positive To Very Positive	Neutral	Negative To Very Negative
Coffeyville	50%	42%	8%
Emporia	56	37	7
Garden City	49	48	3
Great Bend	60	29	11
Hays	49	39	12
Hutchinson	53	35	12
Lawrence	51	37	12
McPherson	70	23	7
Salina	54	33	13
All 9 Communities	54%	36%	10%

n = 856

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

Table 15
Perceptions of Local Services

	No Opinion	Good	Adequate	Poor
Fire Protection	4%	76%	19%	1%
Electrical System	1	74	21	4
Public School System	7	73	17	3
Police Protection	1	69	27	3
Quality of Garbage Collection	6	65	25	4
Telephone System	1	63	30	6
Freight Delivery Time	12	53	31	4
Quality of Training	18	37	31	14
Quality of Roads	1	35	46	18
Quality of Railroads	34	28	27	11
Cost of Transportation	10	29	47	14
Quality of Public Transportation	28	13	24	35
Availability of Air Transportation	21	12	29	38

n = 858

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

Perception of Services

In general, firms are satisfied with utilities and local government services. As Table 15 shows, high percentages of firms gave good ratings to fire protection, the electric systems, the public school systems, police protection, the telephone systems, and garbage collection in their

Table 16
Familiarity with Economic Development Programs

	No Knowledge	Knowledge but No Use	Used Program
Community Development Block Grant Programs	37%	61%	2%
Job Training Partnership Act	42	47	11
Kansas Industrial Training Program	64	34	2
Centers of Excellence	84	15	1
Certified Development Companies	88	10	2
	n = 858		

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

Table 17
Human Resources

	Percent of Firms	
	Requiring Specialized Skills	Used Services of Kansas Training Facilities*
Coffeyville	3%	32%
Emporia	4	59
Garden City	4	37
Great Bend	6	32
Hays	3	41
Hutchinson	3	33
Lawrence	2	39
McPherson	2	37
Salina	3	41
All 9 Communities	3%	39%
	n = 856	n = 858

*State university, community college, or vocational school.

Source: Business Retention and Expansion Survey for Kansas Mid-Size Communities with Populations of 10,000 to 100,000, Institute for Public Policy and Business Research, The University of Kansas, 1987.

communities. On the other hand, a relatively high percentage of respondents rated the availability of air transportation, the quality of public transportation, and the quality of roads as poor.[5] The availability of air transportation received the most poor ratings, 38 percent, followed by the quality of public transportation, which was given a poor rating by 35 percent of all respondents. Clearly, air transportation and public transportation are major problems for firms in Kansas mid-sized communities.

The poor ratings given for transportation will become more important as firms expand and broaden their markets. Managers of expanding firms will look to see if they can adequately move products to and from their destination, and, according to the survey results, what they will find will not be encouraging. Important for the local business climate, however, is the good quality of local services.

Economic Development Programs

Survey results show clearly that respondents know little of economic development programs available in Kansas. Eighty-eight percent of respondents knew nothing of Certified Development Companies, 84 percent had no knowledge of Centers of Excellence, 64 percent had no knowledge of the Kansas Industrial Training Program (KIT), 42 percent had no knowledge of the Job Training Partnership Act (JTPA), and 37 percent had no knowledge of Community Development Block Grant Programs (see Table 16). Percentages of respondents with no knowledge were even higher for firms with fewer than 20 employees.

Firms in Kansas mid-sized communities cannot participate in state economic development programs if they do not have information about the program. Only 11 percent of respondents had actually taken advantage of JTPA, and no more than 2 percent of respondents had used any of the other programs. Greater efforts must be made to ensure that clear information about these programs reaches the business community.

Job Training

Ninety-seven percent of respondents reported that they do not need employees with specialized skills (see Table 17). To remain competitive, companies will have

Survey results show clearly that respondents know little of economic development programs available in Kansas.

to adapt to changing technologies and business processes that require more specialized skills. Training and retraining workers will increase the resources available for expansion.

State universities, community colleges, and vocational schools can help businesses improve their workers' skills and enhance technologies used by firms. Sixty-one percent of respondents reported that their firms had not used these institutions (see Table 17). Once again, larger firms generally used these schools' services more than did smaller firms. An implication here is that efforts must be made to maintain and increase contacts between firms and these educational institutions.

Conclusions

Companies in Kansas mid-sized communities are small, home grown, and, in general, pleased with available public services and with the quality of life in their community and in Kansas. It may be in the state's best interest to encourage these companies to stay and expand in their communities, to foster the home-grown firm and the development of more like them. Firms with fewer than 20 employees should not be ignored. These companies form the foundation of mid-sized communities and the best source of growth.

The survey results show this to be an excellent time for the state and for mid-sized communities to encourage business retention and expansion. Optimism is high, and many firms are planning increases in employment and physical plant size. Information about state programs that will expedite expansion must be communicated to these cities: ways to increase funding for expansion, ways to open doors to new financial sources, and ways to train or retrain additional labor.

Respondents in mid-sized communities have limited experience selling their products abroad. Most of their sales are in Kansas. If the Kansas economy is to grow, Kansas business leaders must develop international trade. Whether business people recognize it or not, their competition is not only national, but international. Kansas needs to tell its business leaders how to enter the international market; state agencies should develop and deliver information to business people about how to export their products. Such information may ease the fear of entering a business venture that is unknown.

One of the most important findings was the general lack of knowledge about economic development programs. As shown, a great many companies had no idea that certain assistance was available, and it is logical to conclude that state intended benefits from these programs are not being realized in Kansas mid-sized communities. State agencies must make better use of existing information networks to inform business people about available economic development assistance. Such information should include not only general descriptions of programs offered, but how programs can benefit a particular company and how they have helped in the past. These programs will be used more once they are better funded and more businesses become aware of their existence.

The authors would like to acknowledge the work of Bill Cheek, who helped design the questionnaire and who supervised the collection of data by telephone.

Notes

1. The primary data used in this research were collected by a telephone survey of businesses across the state. The questionnaire was developed by the Institute for Public Policy and Business Research in collaboration with the Kansas State Department of Commerce.

2. In addition to the nine communities, Goodland, a town of fewer than 10,000 residents, was added to the sample to test the research methodology in a small community and to increase the representation of western Kansas. Goodland data were not included when making statistical generalizations about the state. Their inclusion would violate proper sampling and reduce the validity of the overall results.

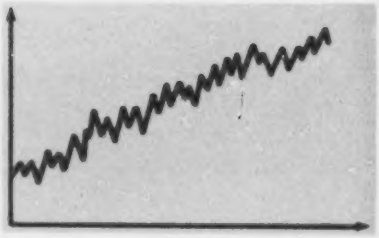
3. The number of firms from each community that participated in the study are as follows: Coffeyville, 78; Emporia, 84; Garden City, 105; Great Bend, 105; Hays, 95; Hutchinson, 99; Lawrence, 102; McPherson, 83; and Salina, 107. The number of responses to each question may vary.

4. All figures are from the U.S. Bureau of the Census.

5. At the time when this survey was conducted, the highway system was a much debated topic in the state capitol and among Kansas citizens. Statements about the highway system made here may be different from opinions given if the survey were given at another time.

Respondents in mid-sized communities have limited experience selling their products abroad.

Kansas Employment Forecast: A Time-Series Approach



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Introduction

This paper reports our forecasts of Kansas employment by sector based on single time-series equations. Further research based on vector time-series will appear in the next issue of this review. These time-series models complement the Kansas Econometric Model, currently under development at the Institute for Public Policy and Business Research. The time-series methods cannot determine the impacts of policy changes, but results are useful for estimating some values for the Kansas Econometric Model, which is designed for policy simulation.

Data Description and Statistical Methods

Quarterly employment data from 1960 through 1987 were examined for eleven sectors:

*mining (including oil and gas extraction)
*construction
*durable goods manufacturing
*nondurables manufacturing
*transportation
*wholesale trade
*retail trade
*finance, insurance, and real estate
*services
*farm
*government

We also considered three aggregated employment series: total nonagricultural employment, total employment, and labor force. Although sectors are classified a little more broadly in our study than in forecasts produced by the Kansas Econometric Model, the data are roughly comparable. For several small sectors, the time-series approach does a poor job. Presumably, the underlying assumption that employment changes according to an historical pattern (regularity) does not hold up for small sectors.

The data are provided by Kansas State Department of Human Resources. All data from before 1987 are the final revisions; the 1987 data have been revised once and may be revised as many as two more times.

Each employment data series is fitted by a time-series model. We begin with autoregressive models. First, the model is estimated for the period from 1960 through 1984. We then predict the values for 1985 through 1987. The predictions are compared to the actual figures to compute the percentage forecast errors. This is the usual cross-validation procedure. If the percentage forecast errors are large (more than 2 or 3 percent), we then turn to autoregressive moving-average models or autoregressive integrated moving-average models. In practice, several cross-validation procedures are applied to determine the final time-series model for forecasting purposes. Since we do not seasonally adjust the series, most seasonal dummies are rather significant and should be included as explanatory variables.

For most sectors, autoregression models with seasonal dummies perform well. Forecast errors are often less than 1 percent. A major reason is simply that employment in a sector is an aggregation of employment in several subsectors, and aggregation smoothes out the disturbances in various subsectors. The exceptions are mining, farm, and government employment.

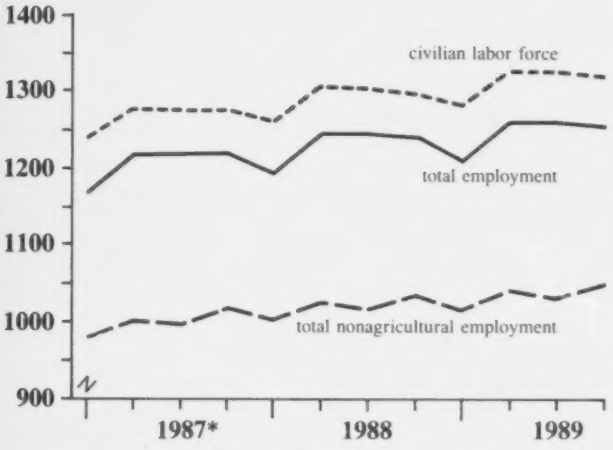
In order to reduce the forecast errors for farm and government employment, we used an autoregressive integrated moving average model [ARIMA (4, 2, 3)]. Percentage forecast errors were satisfactorily reduced as a result.

With mining employment, the time-series approach did not work well. In Kansas, mining is mainly oil and gas extraction, and employment in this small sector fluctuates erratically owing to unstable oil prices. The assumption of regularity, which underlies the time-series methods, does not hold for mining employment in Kansas.

A further difficulty for forecasting Kansas mining employment arises from the following fact: Mining employment

For most sectors, autoregression models with seasonal dummies perform well. Forecast errors are often less than 1 percent.

Figure 1
Kansas Employment Forecasts (in thousands)



Year:Quarter	Employment Nonagricultural	Employment Total	Labor Force
1987:I	979.77	1164.37	1238.43
1987:II	1002.40	1216.97	1278.20
1987:III	996.90	1219.03	1274.93
1987:IV	1019.40	1219.60	1276.43
1988:I	1002.72	1195.43	1263.33
1988:II	1026.21	1245.87	1306.28
1988:III	1017.63	1245.36	1303.85
1988:IV	1036.11	1239.25	1298.64
1989:I	1018.99	1213.13	1283.67
1989:II	1041.68	1263.29	1328.24
1989:III	1032.25	1263.19	1327.28
1989:IV	1049.36	1254.92	1319.02

*Actual data from the Kansas Department of Human Resources.

dropped sharply in 1985 and gradually recovered through 1987. Thus, forecasts vary widely depending on whether or not 1985 data are included in the regression. We provide the mining forecasts based on autoregression models with the caveat that the time-series method has performed poorly for this sector.

Forecasts for 1988 and 1989

Figure 1 shows the time-series forecasts for each quarter of 1988 and 1989 along with historical data from 1987. Total nonagricultural employment growth will average 2.1 percent in 1988 and 3.6 percent in 1989 over 1987 levels. The pattern for total employment is nearly identical, but the labor force is predicted to grow 2.4 percent in 1988 and 3.7 percent in 1989. Since the labor force will increase more than total employment, we predict rising unemployment rate for 1988 and 1989 net of migration.

Table 1 shows employment forecasts

Table 1
Sectoral Employment Forecasts (in thousands)

	1987*				1988				1989			
Sector	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Mining	10.83	11.23	11.73	12.07	11.99	12.99	12.93	12.89	12.59	12.91	13.23	13.10
Construction	40.03	44.97	47.70	45.10	39.39	45.13	47.60	45.16	39.51	45.14	47.63	45.23
Durables	100.47	102.27	103.07	103.90	102.89	103.47	102.90	103.69	102.66	103.24	102.68	103.48
Nondurables	72.00	73.73	74.03	74.10	74.01	74.94	75.08	74.91	74.79	75.75	75.89	75.72
Transportation	60.83	61.63	61.57	61.73	60.09	61.22	61.34	61.18	59.82	60.99	61.17	60.88
Wholesale Trade	66.47	67.87	68.87	68.87	69.09	70.20	70.72	70.19	70.46	71.54	72.03	71.45
Retail Trade	178.10	182.20	184.17	189.10	183.26	187.65	189.02	192.57	186.89	191.41	193.05	196.42
F.I.R.E.	55.33	56.63	57.10	56.40	56.49	57.67	58.35	57.85	57.87	58.95	59.68	59.30
Services	196.47	201.13	201.73	203.73	204.11	208.63	209.61	210.47	210.96	215.23	216.27	216.94
Farm	50.97	67.77	72.50	55.10	49.79	65.73	70.45	54.19	48.93	63.93	68.48	52.33
Government	199.23	200.73	186.93	204.40	201.91	203.90	189.04	207.17	204.18	206.59	191.38	209.82

*Historical data.

by sector. Employment is forecasted to decrease in three sectors: farm, transportation, and construction. Construction employment is forecasted to fall 0.7 percent in 1988 and 1.3 percent in 1989. Our assumption that underlying economic trends demonstrate a regular pattern is least likely to be valid for construction. Construction is a relatively small and volatile sector, vulnerable to non-historical patterns. Transportation employment is predicted to decline 0.8 percent in 1988 and 1.2 percent in 1989 from 1987 levels. On the other hand, farm employment has fallen continuously since 1960. We predict the trend will continue, with farm employment falling 2.4 percent in 1988 and 4.6 percent in 1989.

Employment in durable goods manufacturing will be higher than 1987 during the first half of 1988 and 1989 (averaging 1.9 percent and 1.6 percent respectively), but it will decrease during the second half of both years, falling to 0.3 percent below 1987 levels in the second half of 1989. On average, durable goods manufacturing employment will fall between 1988 and the end of 1989.

The outlook for nondurable goods manufacturing employment is brighter. Forecasted increases over 1987 employment levels are 1.7 percent in 1988 and 2.8 percent in 1989.

Five of the remaining sectors appear to be stronger sources of future employment growth. Wholesale and retail trade employment will grow at almost the same pace—between 2.6 and 3.0 percent in 1988 and 4.7 and 4.9 percent in 1989 over 1987 levels. Finance, insurance, and real estate employment is very stable and easily predicted. We see average percentage increases of 2.2 percent and 4.6 percent in 1988 and 1989 respectively over 1987 levels. Government employment will expand modestly, averaging increases of 1.4 percent and 2.7 percent over 1987 levels in 1988 and 1989 respectively. The forecast indicates that fastest growth will be in the service sector, a prediction that conforms to empirical observation and conventional wisdom. Average increases over 1987 levels will be 3.7 percent in 1988 and 7.0 percent in 1989.

Finally, there is mining. Large increases are forecasted for both 1988 and 1989, but for reasons discussed above, these forecasts are not to be trusted.

The authors wish to acknowledge Norman Clifford, Mohamed El-Hodiri, and De-Min Wu for helpful discussions.

Appendix I

Table A-1
Models Used to Forecast Kansas Employment

Non-Agricultural:	AR (6) with seasonal dummies on Quarters I, II, III
Total Employment:	AR (6) with seasonal dummies on Quarters I, II, III
Civilian Labor Force:	AR (6) with seasonal dummies on Quarters I, II, III
Mining:	AR (3) with seasonal dummies on Quarters II, III
Construction:	AR (3) with seasonal dummies on Quarters I, III
Durable Mfg.:	AR (2) with seasonal dummies on Quarters I, III
Nondurable Mfg.:	AR (3) with seasonal dummies on Quarter II
Transportation:	AR (6) with seasonal dummies on Quarters I, II, III
Wholesale Trade:	AR (6) with seasonal dummies on Quarters I, II, III
Retail Trade:	AR (6) with seasonal dummies on Quarters I, II, III
F.I.R.E.:	AR (6) with seasonal dummies on Quarters I, II, III
Services:	AR (6) with seasonal dummies on Quarters I, II, III
Farm:	ARIMA (4, 2, 3)
Government:	ARIMA (4, 2, 3)

Appendix II

After the paper was written, we received the actual employment figures of 1988:I from the Kansas State Department of Human Resources. Although these are preliminary numbers, it is meaningful to compare them to our forecasts.

Table A-2
Kansas Employment, First Quarter 1988 (in thousands)

	Forecast	Actual	Error (%)
Civilian Labor Force	1263.33	1268.20	−0.384
Total Employment	1195.43	1200.20	−0.397
Nonagricultural Employment	1002.72	1003.50	−0.078
Nondurable Goods Mfg.	74.01	73.80	0.285
Durable Goods Mfg.	102.89	104.60	−1.635
Transportation	60.09	60.40	−0.513
Wholesale Trade	69.09	68.53	0.817
Retail Trade	183.26	185.10	−0.994
F.I.R.E.	56.49	56.50	−0.018
Services	204.11	204.07	0.020
Mining	11.99	11.63	3.095
Construction	39.39	36.80	7.038
Farm	49.79	49.83	−0.080
Government	201.91	201.97	−0.030

The forecast indicates that fastest growth will be in the service sector, a prediction that conforms to empirical observation and conventional wisdom.

Economic Outlook

The National Forecast

Real GNP will grow at a 2.5 percent annual rate for the last three quarters of 1988, leading to 3.1 percent growth for the year. During the first half of 1989, GNP growth will jump to 3.2 percent. The national economy will not sustain this rapid growth, however, as higher interest rates resulting from the Federal Reserve's tightening of the money supply begin to be felt. Overall, the national economy will grow slightly more slowly in 1989 than in 1988, at about 2.9 percent.

GNP growth will continue to be driven by growth in nonresidential investment spending and exports for the remainder of 1988 and the early part of 1989. Behind the growth in nonresidential investment is the fact that businesses are facing capacity constraints. While the economy has grown, their investment in plant and equipment has remained constant. Following two years of no real growth in nonresidential investment spending, firms will increase their real investment spending 7.3 percent (annual rate) during the last three quarters of 1988. Along with the 21 percent (annual rate) increase in the first quarter, this will produce an 11.6 percent increase for the year. Higher interest rates and the added capacity resulting from 1988 investment will slow nonresidential investment spending growth to 8.4 percent (annual rate) during the first half of 1989.

To better explain this strong area of economic growth, nonresidential fixed investment can be separated into two components: structures and equipment. Producers' real purchases of durable equipment will grow 15.3 percent in 1988, but investment in structures will only increase 2.2 percent. A large proportion of equipment expenditures will be for computers, a trend that continues from last year when computer networking technology became accessible to most businesses. But businesses' shift in investment priorities from buildings to equipment is also part of a longer term trend. While real investment spending will have grown nearly 37 percent between 1982 and 1988, real spending on equipment will have grown 67 percent, and spending on structures will have dropped 11 percent. Seventy-five cents of every dollar of firms' fixed investment in 1988 will go for equipment compared with 61 cents in 1982.

In contrast to nonresidential spending, residential spending will be one of the weakest components of aggregate demand in 1988. Constrained mainly by the increase in interest rates following the Federal Reserve's exercise of monetary restraint, real residential investment will decline 2.9 percent (annual rate) over the last three quarters of 1988. This will lead to a 3.3 percent decline for 1988 following no growth during 1987. Residential investment will improve slightly over the first half of 1989, growing 1.3 percent (annual rate).

The other major driving component of aggregate demand will be exports. A continuing but modest decline of the dollar will help real exports grow 12.6 percent, a $53.8 billion increase over 1987. But real imports will rise 8.1 percent ($45.5 million) this year. The net effect will be an $8.2 billion decrease in the real U.S. trade deficit in 1988.

In spite of an increase in the growth of disposable income, consumer spending will continue to grow as slowly in 1988 as

Highlights

1. National economic growth will slow in 1989 following strong growth in the balance of 1988 and the first half of next year.
2. Interest rates are expected to rise modestly in 1988 and slightly faster in 1989.
3. The inflation rate will continue to increase, reaching an average of 4.5 percent for the first half of 1989.
4. Nonresidential investment spending and exports will drive demand for the remainder of 1988 and on into 1989.
5. The Kansas economy will also show relatively strong growth during the balance of 1988, with some slowing down likely in 1989. However, Kansas will continue to grow at a slightly slower rate than the national average over this period.
6. Durable goods, retail trade, services, and mining will lead Kansas employment growth in 1988.
7. Unemployment rates in both Kansas and the nation will fall during 1988, and they will not increase in the first half of 1989. The Kansas unemployment rate will remain below the national average.
8. In 1988 civilian employment growth in Kansas will trail national growth by nearly 0.3 percent.
9. Personal income will grow more rapidly in both Kansas and the nation during the next 12 months, but Kansas's growth will be about 1 percent slower than the nation's. During 1988, Kansas personal income will grow 5.7 percent, and U.S. personal income will grow 6.6 percent.

it did in 1987. Real growth in consumption demand will be 1.9 percent again this year. Although buyers appear to have recovered completely from the October 1988 stock market crash, high levels of consumer debt will act as a brake on spending. The strongest component of consumption growth will be services, which will grow 3.3 percent in real terms, followed by durable goods with a 2.3 percent increase. Real demand for nondurable goods will decline slightly. During the first half of 1989, real consumption spending will increase 2.8 percent (annual rate), driven mainly by a 4.8 percent increase in consumer spending on durables.

This year purchases by all levels of government will increase 1.4 percent in real dollars compared with 2.3 percent in 1987. Real federal government purchases will decline 0.1 percent, while state and local government purchases will increase 2.5 percent. In current dollars federal government expenditures will grow 2.8 percent in 1988. Since government receipts are expected to grow 7.3 percent, we forecast a modest reduction ($6.4 billion) in the federal government's budget deficit in 1988.

The Federal Reserve Board's exercise of monetary restraint will cause interest rates to increase through the end of 1988 and early 1989.

- The interest rate on three-month Treasury bills is expected to average 6.7 percent during the last half of 1988 and 6.9 percent during the first half of 1989. The rate was 6 percent during the first half of 1988.

- The average prime lending rate is likely to be 9 percent during the rest of the year and 9.3 percent during the first half of 1989. The first half of this year it was 8.7 percent.

- Moody's AAA bond rate could average 10.1 percent during the last half of 1988 and 10.4 percent during the first half of 1989, as compared with 9.7 percent in the first half of 1988.

Forecasted employment growth reflects the forecasted growth in economic output. Private non-farm establishment employment will grow 3.3 percent in 1988, compared with 2.5 percent in 1987. Civilian employment will grow 2.5 percent in 1988 compared with 2.6 percent in 1987. The less than 2 percent growth in the civilian labor force for 1988 means that the unemployment rate will decline to 5.4 percent in 1988, compared with 6.1 percent in 1987. These trends will continue during the first half of 1989, with growth in civilian employment (2.3 percent annual rate) exceeding growth in the labor force (1.9 percent annual rate) and the unemployment rate falling to 5.1 percent.

An unemployment rate near 5 percent, coupled with a capacity utilization rate of nearly 83 percent, undoubtedly means some inflationary pressures as a result of tightness in the labor market. In spite of the Federal Reserve Board's attempt to contain inflation by exercising monetary restraint, there will be some upward movement in prices. This movement is forecasted to be modest, in part because of the Federal Reserve Board's actions and in part because some growth in labor productivity will have an offsetting effect on the high level of capacity utilization and low unemployment rates. The forecasted rate of inflation, as measured by the rate of change of the consumer price index, is 3.9 percent for 1988 and 4.4 percent for 1989, compared with 3.7 percent in 1987.

The forecasted economic growth is also reflected in personal income. For 1988 and 1989, we predict personal income in current dollars will grow 6.6 percent, compared with 6.0 percent in 1987. In real terms, personal income will grow 3 percent in 1988, compared with 2 percent in 1987. Real disposable personal income will grow 2.9 percent in 1988, compared with 1.2 percent in 1987.

Our U.S. forecast, summarized in Table 1, is based on the Indiana University Econometric Model of the United States. To arrive at the preceding forecast, we have imposed the following major assumptions on that model:

1. The Federal Reserve will continue to monitor inflation closely. It will set a target growth range for M2 of between 3 and 7 percent, and the actual rate of growth of M2 will be just over 5 percent.

2. The main outlines of the December 1987 budget accord between Congress and the Administration will survive in tact. Whoever wins the 1988 elections will continue to exercise some fiscal restraint and to reallocate some resources from defense to nondefense spending.

Table 1
The National Forecast—Summary

	1986	1987	1988	1989 1st Half*
Real GNP (in billions)	3,713.4	3,821.1	3,937.8	4,024.4
Growth Rate	2.9	2.9	3.1	3.2
Rate of Inflation	3.4	3.7	3.9	4.5
Civilian Employment (in millions)	109.8	112.6	115.4	117.5
Growth Rate	2.3	2.6	2.5	2.3
Unemployment Rate	6.9	6.1	5.4	5.1
3-Month T-bill Rate	6.0	5.8	6.4	6.9
Real Disposable Income (in billions)	2,645.5	2,672.2	2,754.0	1,286.3
Growth Rate	4.1	1.2	2.9	2.6

*Annual rates.

3. Economic growth in the other OECD countries will average 2.5 percent in 1988 and will slow to 1.3 percent in 1989.[1]

4. OPEC will continue to have difficulty enforcing lower production targets. As a result, world oil prices will decline 9.3 percent in 1988 and rise 5 percent in 1989.

The Kansas Forecast

The Kansas forecast, summarized in Table 2, is based on the Institute's Kansas Econometric Model and on the national forecast given above.

Following the national trend, the Kansas economy will grow modestly during the rest of 1988 and will continue to grow, although at a slower rate, during the first half of 1989. Non-farm wage and salary employment will grow at an annual rate of 1.8 percent in the last three quarters of 1988, resulting in 2 percent growth for the year. During the first two quarters of 1989, non-farm wage and salary employment will continue to grow, although at a slightly lower 1.5 percent annual rate. Total Kansas employment (which includes estimates of farm employment) will grow 2.1 percent (annual rate) for the last three quarters of 1988, leading to 2.3 percent growth for the year. Total Kansas employment will grow at a 1.5 percent annual rate during the first two quarters of 1989. Kansas employment will grow faster than the labor force this year, reducing the 1988 unemployment rate to 4.7 percent. Unemployment was 4.9 percent in 1987.

As Table 3 shows, the strongest employment sectors will be durable goods, retail trade, services, and mining. Durable goods employment will grow 3.4 percent in 1988, but growth will slow to a 1.5 percent annual rate in the first half of 1989 as a result of leveling off of growth in the transportation equipment sector. Last year durable goods employment decreased by 0.2 percent. Among the durable goods manufacturing industries, growth will be stronger in primary metals, fabricated metals, machinery, including electrical machinery, and transportation equipment.

During the rest of this year and the first half of next year, retail employment

Table 2
The Kansas Forecast—Summary

	1986	1987	1988	1989 1st Half*
Total Employment (in thousands)	1,169.0	1,205.0	1,232.6	1,251.1
Growth rate	−0.8	3.1	2.3	1.5
Wage & Salary Employment (in thousands)	984.8	999.6	1,019.4	1,034.0
Growth rate	1.8	1.5	2.0	1.5
Unemployment Rate	5.4	4.9	4.7	4.7
Nominal Personal Income (in millions)	35,631.0	37,021.0	39,117.0	40,750.0
Growth rate	5.2	3.9	5.7	5.8
Real Personal Income (in millions of 82$)	31,213.0	31,151.0	31,767.0	32,162.0
Growth Rate	3.0	−0.2	2.0	1.9

*Annual rates.

Table 3
Kansas Employment by Sector (in thousands)

	1986	1987	1988	1989 1st Half*
Mining	112.2	111.5	112.1	112.2
Growth Rate		−5.7	5.2	0.8
Construction	43.9	44.5	42.2	40.6
Growth Rate		1.3	−5.1	−3.8
Nondurables	73.1	73.5	74.9	75.9
Growth Rate		0.5	1.9	1.3
Durables	102.6	102.4	105.9	106.7
Growth Rate		−0.2	3.4	0.8
Transportation	62.7	61.4	61.5	61.5
Growth Rate		−2.1	0.2	0.0
Wholesale Trade	67.1	68.0	69.3	69.4
Growth Rate		1.3	1.9	0.1
Retail Trade	180.7	183.4	189.4	189.3
Growth Rate		1.5	3.3	−0.1
FIRE	54.7	56.4	57.5	57.8
Growth Rate		3.1	2.0	0.5
Services	193.7	200.8	207.6	210.8
Growth Rate		3.7	3.4	1.5
Federal Govt.	27.7	27.3	27.1	27.0
Growth Rate		−1.4	−0.7	−0.4
State & Local Govt.	166.4	170.5	171.6	177.4
Growth Rate		2.5	0.6	3.4

*Annual rates.

growth will be stronger than it was last year. Last year it grew 1.5 percent, this year it will grow 3.3 percent, and it will grow 1.2 percent (annual rate) during the first half of 1989.

Employment in mining will continue its first quarter recovery during the rest of this year. Last year it fell 6.3 percent, and this year it will grow 5.6 percent. The strength in mining employment is due to a comeback in oil and gas employment, which will grow 6.7 percent this year in response to steady increases in U.S. prices.

Employment in services will grow 3.4 percent in 1988, compared with 3.6 percent in 1987.

Other sectors where employment will be growing, although more slowly than the ones mentioned above, are nondurable goods, wholesale trade, and finance, insurance, and real estate. Employment in nondurable goods manufacturing will grow at an annual rate of 1.8 percent during the last three quarters of 1988 and 1.9 percent for the year, compared with 0.6 percent in 1987.

The strongest components of nondurable goods manufacturing will be apparel (7.4 percent in 1988) and food and kindred products (3.2 percent in 1988). Employment in wholesale trade will grow at a 1.6 percent annual rate for the last three quarters of 1988 and 2 percent for the year, compared with 1.3 percent in 1987. Employment in finance, insurance, and real estate will grow at 1.9 percent annual rate in the last three quarters of 1988 and 2 percent for the year, compared with 3.1 percent in 1987. Employment in government and transportation and utilities will show very little growth in 1988 and the early part of 1989. Employment in transportation and utilities will grow at only a 0.4 percent annual rate for the last three quarters of 1988, which will mean only 0.1 percent for the year. Employment in transportation and utilities declined 1.9 percent last year. Federal government employment in Kansas will decline 0.9 percent this year, compared with a 1.6 percent decrease in 1987. State and local government employment will grow only 0.6 percent this year; last year it grew at 2.5 percent. Total government employment in Kansas will increase by 0.5 percent in 1988.

Growth in employment in Kansas will be accompanied by modest growth in personal income. Personal income in current dollars will grow 6 percent (annual rate) during the last three quarters of 1988 and 5.7 percent for the year, compared with 3.9 percent in 1987. In the United States, personal income will increase 6.6 percent this year.

Adjusting for inflation,[2] Kansas personal income will grow 1.9 percent in 1988 compared with 3 percent growth in the United States. In 1987, Kansas real personal income decreased 0.2 percent. The annual rate during the last three quarters of 1988 will be 2.3 for Kansas.

Norman Clifford, Director of the Kansas Econometric Model
Robert Glass, Research Economist
Institute for Public Policy and Business Research

Notes

1. Organization for Economic Cooperation and Development. Member nations are Australia, Austria, Belgium, Canada, Denmark, Finland, France, West Germany, Greece, Holland, Iceland, Ireland, Italy, Japan, Luxembourg, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, and the United States.

2. We used the personal consumption deflator for the United States.

1986-1987 *Kansas Statistical Abstract*

The *Kansas Statistical Abstract* offers recent and historical economic and demographic data for Kansas, its cities and counties. A few spiral-bound copies are still available for $15.00. Lotus 1-2-3© diskettes are $35.00. Kansas residents should include 4.5 percent sales tax where applicable.

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The 1987–1988 *Abstract* will be available at the end of the year.

County Profiles Available

County profiles based on the 1986–1987 *Statistical Abstract* are still available. The reports contain the same information as the *Abstract*, but it is reorganized so that all data pertaining to a single county appear together. In addition, there is a Kansas profile report that contains the totals for the state.

There are 106 profiles: one for each county plus the state report. Each profile costs $5.00. If you order 10 or more profiles the cost is $2.50 per profile. The reports are unbound on 8½ × 11 inch paper. The profiles for all counties and the state are also available on 5¼" PCDOS/MSDOS floppy diskettes in Lotus 1-2-3® format at $50.00 per copy.

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_____ Brown	_____ Elk	_____ Jackson	_____ Miami	_____ Republic	_____ Thomas
_____ Butler	_____ Ellis	_____ Jefferson	_____ Mitchell	_____ Rice	_____ Trego
_____ Chase	_____ Ellsworth	_____ Jewell	_____ Montgomery	_____ Riley	_____ Wabaunsee
_____ Chautauqua	_____ Finney	_____ Johnson	_____ Morris	_____ Rooks	_____ Wallace
_____ Cherokee	_____ Ford	_____ Kearny	_____ Morton	_____ Rush	_____ Washington
_____ Cheyenne	_____ Franklin	_____ Kingman	_____ Nemaha	_____ Russell	_____ Wichita
_____ Clark	_____ Geary	_____ Kiowa	_____ Neosho	_____ Saline	_____ Wilson
_____ Clay	_____ Gove	_____ Labette	_____ Ness	_____ Scott	_____ Woodson
_____ Cloud	_____ Graham	_____ Lane	_____ Norton	_____ Sedgwick	_____ Wyandotte
_____ Coffey	_____ Grant	_____ Leavenworth	_____ Osage	_____ Seward	
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The Annual Economic Outlook Conference

Economic Policy Challenges for the 1990s

October 7, 1988
University of Kansas

It is not too early for Kansans to begin thinking about the economic challenges for the coming decade. As every business person knows, gaining information is the first real step to identifying and meeting challenges effectively. Thus, the objective of the 1988 Annual Economic Outlook Conference is to alert our audience to the challenges and provide expert information to assist in meeting the future.

The future of our economic well-being will depend not only on our state and national policies, but issues affecting world-wide economic policies as well. The conference will touch upon each of these facets. **Lindley Clark,** Economic News Editor for the *Wall Street Journal,* will discuss how the emerging global economy will affect America's competitiveness while **Michael Darby,** Assistant U.S. Treasury Secretary for Economic Policy, will address national and midwest economic trends, issues, and concerns for the 1990s. Several sessions will chart the importance of developing a partnership between industry, universities, and government to foster innovation and competitiveness in Kansas industry; relate the potential impacts of interstate banking; and provide information on community approaches to economic development in nonmetropolitan areas. The economic modeling group of the Institute for Public Policy and Business Research will also offer a workshop on economic modeling and projections for Kansas and the nation.

Come join us and acquire useful information about the economic policy issues of the next decade while meeting other Kansans who are concerned about the state's economic future.

For registration information contact:

Loretta Carraher, Conference Coordinator
Institute for Public Policy and Business Research
University of Kansas
Lawrence, Kansas 66046
(913) 864-3123

Conference registration fee is only $50.00. After October 3, 1988, the registration fee is $60.00.

Economic Indicators

TABLE ONE: ECONOMIC INDICATORS

Comparison Indicators	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Annual rates, SA						
Kansas - Mil. $	4th	38335.0	36630.0	36812.0	4.65	4.14
United States - Bil.$	1st	3902.33	3854.43	3662.03	1.24	6.56
B. Employment						
Kansas - Thou., NSA	1st	1200.26	1219.59	1164.40	-1.59	3.08
United States - Mil., SA	1st	114.21	113.49	111.27	0.64	2.64
C. Unemployment Rate						
Kansas - % NSA	1st	5.4	4.5	6.0		
United States - % SA	1st	5.7	5.9	6.6		
D. Retail Sales - Annual rates						
Kansas - Mil. $, NSA	1st	4179.18	4304.75	4184.67	-2.92	-0.13
United States - Bil. $, SA	1st	391.3	382.7	364.2	2.25	7.43
E. Consumer Price Index-U, All items, SA						
Kansas City* - 1982-1984 = 100	JUL-DEC	114.60	111.40	109.10	2.87	5.04
United States - 1982-1984 = 100	JUL-DEC	114.80	112.50	109.12	2.04	5.21
Kansas Indicators						
F. New Incorporations, NSA						
For Profit - Number		1163.00	1150.00	1114.00	1.13	4.40
G. Tax Revenue, NSA						
General Fund Tax Revenue - Mil. $		479.10	483.00	425.70	-0.81	12.54
H. Operating Expenditures, NSA						
General Fund Operating Expenditures - Mil. $		478.30	358.60	446.20	33.38	7.19

*The Kansas City CPI-U is published semi-annually with the first period being January through June average and the second period being July through December average.
National employment and unemployment rate figures are based on the Current Population Survey (household survey).
State figures are based on the Current Employment Statistics Survey (establishment survey).
NSA-Not seasonally adjusted.
SA-seasonally adjusted.

SOURCE: BEA, BLS, Ks. Dept. of Human Resources, Ks. Secretary of State, Ks. Dept. of Administration, Ks. Dept. of Revenue.

TABLE TWO: NATIONAL INDICATORS
(Seasonally Adjusted)

General Indicators	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Income Measures, Annual rates						
Gross National Product - Bil. 82$	1st	3918.00	3880.80	3772.20	0.96	3.87
Disposable Personal Income - Bil. 82$	1st	2739.80	2713.80	2674.60	0.96	2.44
Personal Consumption - Bil. 82$	1st	2530.90	2504.60	2475.90	1.05	2.22
Gross Private Investment - Bil. 82$	1st	735.70	723.10	671.80	1.74	9.51
Net Export of Goods and Services - Bil. 82$	1st	-119.10	-135.80	-135.20		
Government Purchases - Bil. 82$	1st	770.50	788.90	759.60	-2.33	1.43
Savings Rate - %	1st	4.57	4.53	3.87		
B. Labor Force						
Civilian Labor Force - Mil.	MAR	119.25	121.35	120.90	-1.73	-1.37
Employed - Mil.	MAR	111.46	114.41	114.10	-2.58	-2.32
Unemployed - Mil.	MAR	7.79	6.94	6.80	12.29	14.56
Unemployment Rates - percent						
All	MAR	6.50	5.70	5.60		
Women	MAR	6.50	5.90	5.50		
Men	MAR	6.60	5.60	5.70		
Teens	MAR	17.80	15.40	16.50		
Blacks and other than white	MAR	12.40	11.30	11.50		
Whites	MAR	5.60	4.80	4.70		
C. General Business						
Industrial Production - 1977 = 100	1st	134.50	133.20	126.90	0.98	5.99
Mfg. and Trade Sales - Bil. 82$	1st	1325.30	1321.20	1296.80	0.31	2.20
Mfg. and Trade Inventories - Bil. 82$	1st	2025.20	1998.97	1950.90	1.31	3.81
New Orders, Durable Goods - Bil. 82$	1st	305.51	304.10	280.87	0.46	8.77
Capacity Utilization, Mfg. %	1st	82.70	82.30	80.00		
New Housing Starts, Private - Tho.	1st	4435.00	4598.00	5336.00	-3.55	-16.89
D. Prices						
Consumer Prices - 1982-1984 = 100						
CPI-U, All Items	MAR	116.70	116.10	112.30	0.52	3.92
Food	MAR	115.70	115.30	112.30	0.35	3.03
Housing	MAR	117.20	116.80	113.00	0.34	3.72
Apparel	MAR	114.20	112.00	109.60	1.96	4.20
Transportation	MAR	107.20	107.10	104.00	0.09	3.08
Medical	MAR	136.00	135.40	127.80	0.44	6.42
Producer Prices - 1982-1984 = 100 (NSA)						
All Commodities	MAR	104.90	104.60	101.20	0.29	3.66
Industrial Commodities	MAR	104.70	104.40	101.10	0.29	3.56
Crude Materials	MAR	94.10	94.60	90.30	-0.53	4.21
Capital Equipment	MAR	113.20	112.90	111.10	0.27	1.89
Agricultural Prices - 1977 = 100						
Prices Received	MAR	130.00	130.00	121.00	0.00	7.44
Prices Paid	MAR	165.00	165.00	158.00	0.00	4.43
E. Monetary and Credit Aggregates*						
Total Reserves	1ST	3.30	1.40	16.40		
M1	1ST	3.90	3.90	13.20		
Commercial Banks:						
Savings	1ST	6.30	0.70	35.20		
Small Denomination Time	1ST	13.60	14.80	-5.60		
Large Denomination Time	1ST	2.20	10.50	8.70		
Thrift Institutions:						
Savings	1ST	-2.40	-3.80	25.40		
Large Denomination Time	1ST	15.40	22.20	-12.60		
Debt Components:						
Federal	1ST	9.10	7.50	12.20		
Nonfederal	1ST	10.20	10.60	10.40		
Interest Rates - Monthly						
Prime Rate - %	MAR	8.50	8.51	7.50		
Discount Rate - %	MAR	6.00	6.00	5.50		

* Annual rates of change, seasonally adjusted in percent.

SOURCES: BEA, BLS, Survey of Current Business, Federal Reserve Bulletin.

TABLE THREE: QUARTERLY EMPLOYMENT IN KANSAS

	1988 Q1	1987 Q4	1987 Q1	% Change From 1987 Q4	% Change From 1987 Q1
A. General Indicators					
Civilian Labor Force - Tho.	1268.20	1276.42	1238.45	-0.64	2.40
Employed - Tho.	1200.26	1219.59	1164.40	-1.59	3.08
Farm Employment - Tho.	49.83	55.10	50.97	-9.56	-2.22
Unemployed - Tho.	67.95	56.83	74.05	19.57	-8.24
Initial Claims for Unemployment Insurance - Tho.	13.81	12.55	16.23	9.99	-14.91
Average Work Week, Mfg. - Hrs.	40.67	40.93	40.63	-0.65	0.08
B. Industry Employment, in thousands					
All Industries	1003.50	1019.40	979.77	-1.56	2.42
Manufacturing	178.40	178.00	172.47	0.22	3.44
Durable Goods	104.60	103.90	100.47	0.67	4.11
Fabricated Metal Production	11.37	11.27	10.60	0.89	7.23
Machinery (incl. Elec.)	28.40	27.87	26.83	1.91	5.84
Transport. Equip.	46.30	45.80	44.23	1.09	4.67
Nondurable Goods	73.80	74.10	72.00	-0.40	2.50
Food and Kindred Prod.	28.20	28.53	27.37	-1.17	3.05
Meat Products	14.80	14.90	14.27	-0.67	3.74
Printing and Publishing	18.67	18.50	18.73	0.90	-0.36
Petroleum and Coal	3.00	3.00	3.00	0.00	0.00
Mining	11.63	12.07	10.83	-3.59	7.38
Oil and Gas Extraction	10.30	10.63	9.40	-3.13	9.57
Contract Construction	36.83	45.10	40.03	-18.33	-7.99
Trans. and Public Utilities	60.40	61.73	60.83	-2.16	-0.71
Wholesale Trade	68.53	68.87	66.47	-0.48	3.11
Retail Trade	185.13	189.10	178.10	-2.10	3.95
Finance, Ins., and Real Estate	56.50	56.40	55.33	0.18	2.11
Services	204.07	203.73	196.47	0.16	3.87
Federal Government	26.67	27.07	27.50	-1.48	-3.03
State and Local Government	175.33	177.33	171.73	-1.13	2.10

SOURCES: BLS, Ks. Dept. of Human Resources.

TABLE FOUR: QUARTERLY KANSAS RETAIL SALES SUBJECT TO SALES TAX

	1988 Q1	1987 Q4	1987 Q1	% Change From 1987 Q4	% Change From 1987 Q1
Sales - Mil. $					
Apparel	128.03	117.46	137.10	8.99	-6.62
Automotive	720.76	780.45	697.19	-7.65	3.38
Food	981.87	1023.32	1010.64	-4.05	-2.85
Furniture	229.29	220.32	230.12	4.07	-0.36
General Merchandise	767.53	696.25	743.56	10.24	3.22
Lumber and Building Materials	274.20	351.17	282.27	-21.92	-2.86
Prof. and Pers. Service	228.85	256.62	228.42	-10.82	0.19
Public Utilities	221.09	197.98	231.34	11.67	-4.43
Unclassified	392.11	380.54	391.30	3.04	0.21
Farm and Garden Products	4.91	4.27	4.73	14.92	3.92
Manufacturing and Trading	227.09	273.55	233.09	-16.99	-2.58
Miscellaneous	23.34	14.00	16.97	66.74	37.55
Total	4179.18	4304.75	4184.67	-2.92	-0.13

NOTE: Retail sales figures are based on sales tax collections. Actual and reported retail sales may vary.

SOURCES: Ks. Dept. of Revenue.

TABLE FIVE: QUARTERLY PERSONAL INCOME IN KANSAS*

	1987 Q4	1987 Q3	1986 Q4	% Change From 1987 Q3	% Change From 1986 Q4
A. Personal Income					
Total - Mil. $	38335	36630	36812	4.65	4.14
Nonfarm Income - Mil. $	36316	35674	34745	1.80	4.52
Farm Income - Mil. $	2019	955	2067	111.41	-2.32
Average Weekly Earnings, Mfg.** - $	413	405	404	1.94	2.08
B. Earnings by Industry, in Millions					
Nonfarm	24954	24585	24112	1.50	3.49
Farm	2019	955	2067	111.41	-2.32
Manufacturing	4953	4896	5117	1.16	-3.21
Durable Goods	3020	3039	3317	-0.63	-8.95
Nondurable Goods	1933	1857	1800	4.09	7.39
Mining	404	395	340	2.28	18.82
Contract Construction	1687	1627	1654	3.69	2.00
Trans. and Public Utilities	2215	2203	2160	0.54	2.55
Wholesale Trade	1824	1777	1738	2.64	4.95
Retail Trade	2489	2470	2396	0.77	3.88
Finance, Ins., and Real Estate	1598	1574	1452	1.52	10.06
Services	5251	5126	4852	2.44	8.22
Federal Government	717	702	710	2.14	0.99
State and Local Government	656	651	616	0.77	6.49

*Seasonally adjusted, at annual rates
**Not seasonally adjusted.

SOURCES: BEA, Ks. Dept. of Human Resources.

TABLE SIX: MONTHLY KANSAS AGRICULTURAL INDICATORS

	1988 March	1988 February	1987 March	% Change From 1988 February	% Change From 1987 March
Prices Received *					
All Farm Products - 1977 = 100	160	161	143	-0.62	11.89
All Crops - 1977 = 100	118	118	99	0.00	19.19
Wheat - $/Bu.	2.77	2.82	2.45	-1.77	13.06
Sorghum Grain - $/Bu.	2.88	2.81	2.36	2.49	22.03
Corn - $/Bu.	1.97	1.92	1.58	2.60	24.68
Soybeans - $/Bu.	6.02	5.80	4.58	3.79	31.44
All Hay - $/Ton	72.00	71.00	44.00	1.41	63.64
Livestock and Products - 1977 = 100	186	188	170	-1.06	9.41
All Beef Cattle - $/Cwt.	71.60	71.70	63.30	-0.14	13.11
Steers and Heifers - $/Cwt.	73.00	73.00	64.10	0.00	13.88
Calves - $/Cwt.	94.20	92.10	73.20	2.28	28.69
Hogs - $/Cwt.	41.30	45.40	46.70	-9.03	-11.56
Milk - $/Cwt.	11.50	11.70	NA	-1.71	NA

*Not seasonally adjusted.

SOURCE: Ks. Crop and Livestock Reporting Service.

TABLE SEVEN: QUARTERLY EMPLOYMENT AND SALES FOR SMSAs AND COUNTIES

Area	1988 Q1	1987 Q4	1987 Q1	% Change From 1987 Q4	% Change From 1987 Q1
A. Wichita SMSA					
Civilian Labor Force - Tho.	253.85	254.23	243.79	-0.15	4.13
Employed - Tho.	239.94	242.91	228.47	-1.22	5.02
Unemployed - Tho.	13.91	11.32	15.32	22.90	-9.16
Rate - %	5.47	4.47	6.30		
Retail Sales - Mil. $	831.58	848.84	797.28	-2.03	4.30
B. Kansas Portion of Kansas City SMSA					
Civilian Labor Force - Tho.	320.88	320.81	312.97	0.02	2.53
Employed - Tho.	304.35	306.82	297.41	-0.80	2.34
Unemployed - Tho.	16.53	13.99	15.56	18.09	6.18
Rate - %	5.17	4.37	5.00		
Retail Sales - Mil. $	999.63	948.58	949.33	5.38	5.30
C. Topeka SMSA					
Civilian Labor Force - Tho.	92.45	91.18	88.88	1.39	4.02
Employed - Tho.	87.74	86.91	84.13	0.96	4.29
Unemployed - Tho.	4.71	4.27	4.75	10.26	-0.91
Rate - %	5.10	4.67	5.37		
Retail Sales - Mil. $	315.73	316.61	286.16	-0.28	10.33
D. Lawrence SMSA					
Civilian Labor Force - Tho.	40.31	41.12	39.07	-1.97	3.16
Employed - Tho.	38.66	39.66	37.41	-2.51	3.34
Unemployed - Tho.	1.65	1.46	1.66	12.49	-0.92
Rate - %	4.10	3.53	4.27		
Retail Sales - Mil. $	105.12	109.95	104.24	-4.40	0.84
E. Riley County--Manhattan Area					
Civilian Labor Force - Tho.	27.86	28.42	26.86	-1.98	3.72
Employed - Tho.	26.67	27.40	25.79	-2.64	3.43
Unemployed - Tho.	1.19	1.03	1.07	15.79	10.58
Rate - %	4.27	3.60	3.97		
Retail Sales - Mil. $	59.17	59.90	51.84	-1.22	14.15
F. Reno County--Hutchinson Area					
Civilian Labor Force - Tho.	31.39	31.34	30.90	0.16	1.58
Employed - Tho.	29.51	29.63	28.46	-0.42	3.67
Unemployed - Tho.	1.88	1.71	2.44	10.30	-22.75
Rate - %	6.00	5.47	7.90		
Retail Sales - Mil. $	97.32	102.08	96.15	-4.67	1.21
G. Crawford County--Pittsburg Area					
Civilian Labor Force - Tho.	17.38	17.57	17.03	-1.11	2.05
Employed - Tho.	16.19	16.61	15.82	-2.53	2.38
Unemployed - Tho.	1.18	0.96	1.21	23.56	-2.28
Rate - %	6.80	5.47	7.13		
Retail Sales - Mil. $	43.66	44.61	41.91	-2.14	4.17
H. Lyon County--Emporia Area					
Civilian Labor Force - Tho.	19.91	19.98	19.29	-0.36	3.24
Employed - Tho.	18.87	19.20	18.23	-1.76	3.49
Unemployed - Tho.	1.05	0.78	1.06	33.97	-1.04
Rate - %	5.27	3.90	5.50		
Retail Sales - Mil. $	49.31	50.81	50.21	-2.94	-1.80
I. Saline County--Salina Area					
Civilian Labor Force - Tho.	27.16	27.07	26.68	0.33	1.79
Employed - Tho.	25.56	25.76	24.92	-0.79	2.53
Unemployed - Tho.	1.60	1.31	1.75	22.35	-8.68
Rate - %	5.90	4.83	6.60		
Retail Sales - Mil. $	95.67	98.76	91.45	-3.13	4.61
J. Barton County--Great Bend Area					
Civilian Labor Force - Tho.	14.58	14.88	15.02	-2.02	-2.91
Employed - Tho.	13.68	14.10	13.52	-2.99	1.19
Unemployed - Tho.	0.90	0.78	1.50	15.65	-39.91
Rate - %	6.17	5.23	9.97		
Retail Sales - Mil. $	57.06	59.07	54.38	-3.41	4.92
K. Montgomery County--Coffeyville Area					
Civilian Labor Force - Tho.	18.06	17.97	17.58	0.52	2.71
Employed - Tho.	16.83	17.00	16.20	-0.98	3.90
Unemployed - Tho.	1.23	0.97	1.39	26.77	-11.18
Rate - %	6.80	5.37	7.90		
Retail Sales - Mil. $	50.75	54.20	50.91	-6.35	-0.30

SOURCE: Ks. Dept. of Human Resources, Ks. Dept. of Revenue.

TABLE EIGHT: QUARTERLY BANKING ACTIVITY IN KANSAS*

Federal Reserve Member Banks	1988 Q1	1987 Q4	1987 Q1	% Change From 1987 Q4	% Change From 1987 Q1
Kansas, in Millions					
Total Deposits	35916.7	34614.0	32950.1	3.76	9.00
Total Checkable	6217.3	6170.3	5939.9	0.76	4.67
Demand Deposits	3117.7	3183.7	3074.5	-2.07	1.40
Other Checkable	3099.7	2986.7	2865.8	3.78	8.16
Small Time and Savings	24160.7	23445.7	22430.1	3.05	7.72
Large Time	5538.7	4998.0	4582.1	10.82	20.88
Kansas City, KS, in Millions					
Total Loans	1735.67	1726.27	1569.32	0.54	10.60
Real Estate	884.47	873.03	734.94	1.31	20.35
Commercial and Industrial	539.07	541.27	462.23	-0.41	16.62
Consumer	100.40	103.53	122.33	-3.03	-17.93
Total Deposits	1905.97	1870.90	1760.50	1.87	8.26
Demand Deposits	228.93	237.67	225.10	-3.67	1.70
Time and Savings	1053.17	1030.63	967.68	2.19	8.83
Topeka, in Millions					
Total Loans	345.73	325.23	324.05	6.30	6.69
Real Estate	105.73	104.10	97.15	1.57	8.83
Commercial and Industrial	123.97	110.97	114.88	11.72	7.91
Consumer	64.37	53.47	50.33	20.39	27.89
Total Deposits	534.33	537.30	528.38	-0.55	1.13
Demand Deposits	174.77	173.07	164.77	0.98	6.07
Time and Savings	228.40	231.67	232.92	-1.41	-1.94
Wichita, in Millions					
Total Loans	1240.30	1242.73	1237.01	-0.20	0.27
Real Estate	241.73	247.60	204.11	-2.37	18.44
Commercial and Industrial	468.40	458.30	523.60	2.20	-10.54
Consumer	371.37	379.70	350.60	-2.19	5.92
Total Deposits	1879.57	1864.23	1793.55	0.82	4.80
Demand Deposits	455.83	466.10	445.59	-2.20	2.30
Time and Savings	942.80	924.23	884.43	2.01	6.60

*The data above pertain only to Federal Reserve member banks of Kansas and do not represent all commercial banking in the state. Since 1980, these data have covered approximately 50 percent of the state's banking activity.

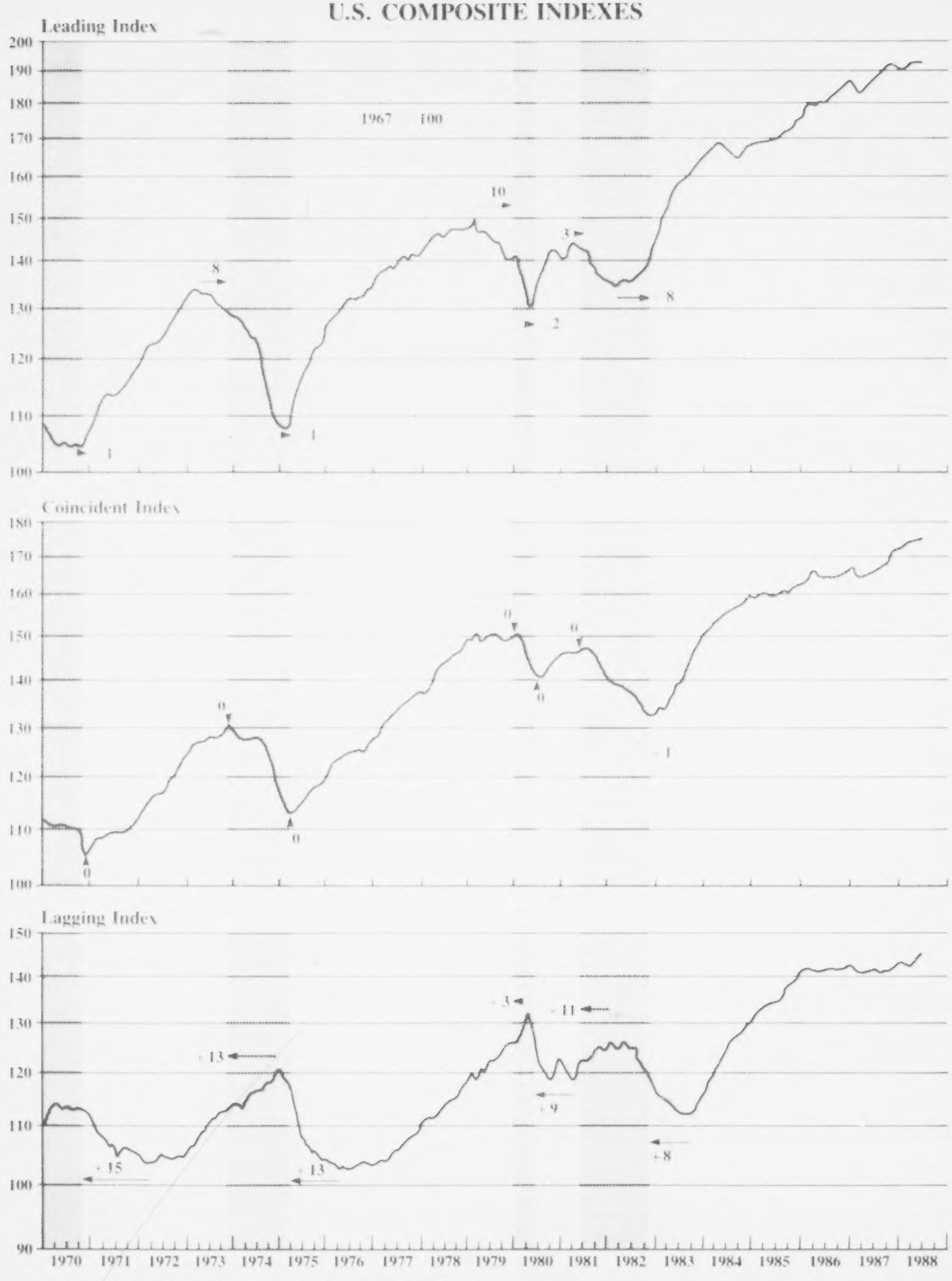
SOURCE: Federal Reserve Bank of Kansas City.

TABLE NINE: QUARTERLY SAVINGS AND LOAN ACTIVITY IN KANSAS

Area	1987 Q4	1987 Q3	1986 Q4	% Change From 1987 Q3	% Change From 1986 Q4
A. Kansas, in Millions					
Total Assets	20410.30	19961.47	16836.63	2.25	21.23
Mortgage Loans	14667.90	14936.43	13072.97	-1.80	12.20
B. Kansas City, KS, in Millions					
Total Assets	2098.33	2069.33	1940.00	1.40	8.16
Mortgage Loans	1629.93	1536.03	1484.40	6.11	9.80
C. Topeka, in Millions					
Total Assets	2988.37	2936.67	2907.57	1.76	2.78
Mortgage Loans	2591.03	2544.47	2387.23	1.83	8.54
D. Wichita, in Millions					
Total Assets	2168.67	2374.50	2014.67	-8.67	7.64
Mortgage Loans	1616.40	1785.87	1495.43	-9.49	8.09

SOURCE: Federal Home Loan Bank of Topeka.

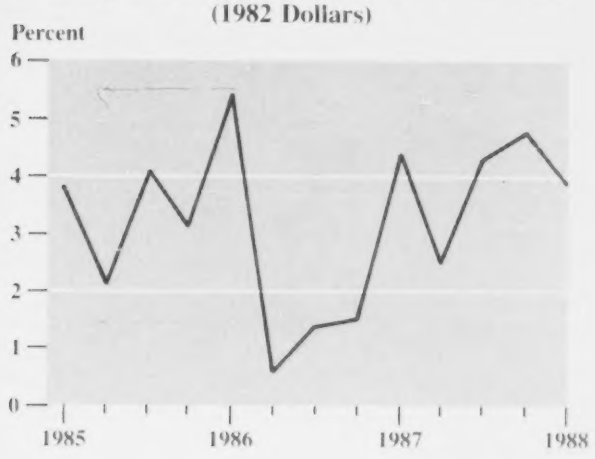
U.S. COMPOSITE INDEXES



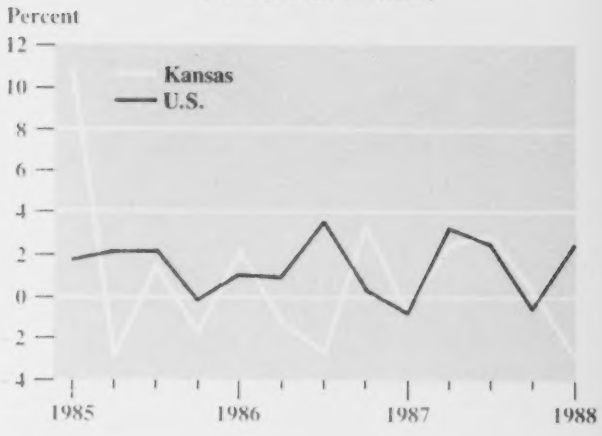
Source: Bureau of Economic Analysis, *Business Conditions Digest*.

Note: Numbers entered on the chart indicate length of leads (−) and lags (+) in months from reference turning dates.
Shading indicates periods of recession.

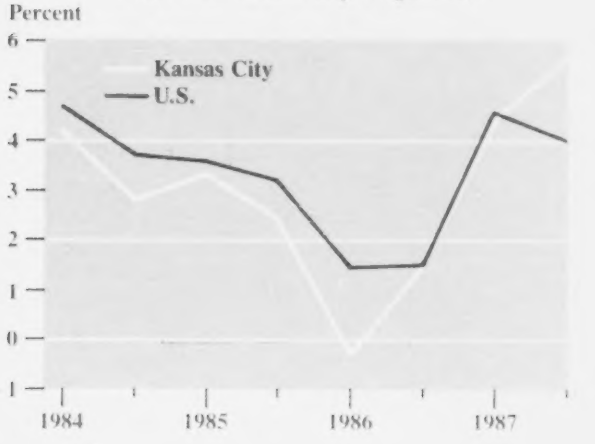
Average Annual Growth Rate of GNP
(1982 Dollars)



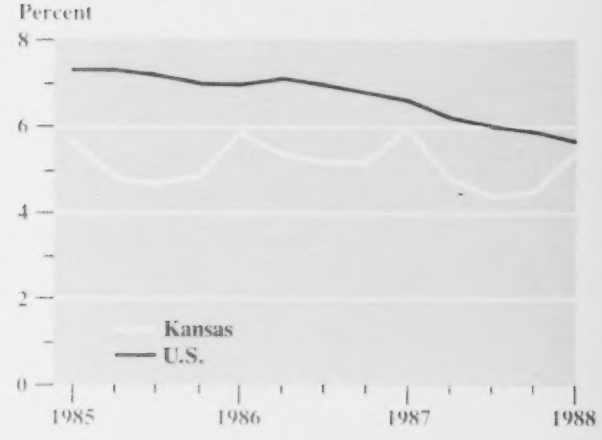
Growth of Retail Sales
(In Current Dollars)



Rate of Inflation
(CPI-U, Seasonally Adjusted)



Civilian Unemployment Rate



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